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STRANGULATED HERNIA: SOME PRACTICAL REMARKS CONCERNING ITS DIAGNOSIS AND ITS PROPER MANAGEMENT*.

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Strangulated hernia presents too important a subject to be comprehensively set forth in a brief essay, therefore the scope of this paper has been limited to the entirely practical and clinical features. No attempt has been made to minutely describe the pathic anatomy of the condition, nor to review the theories of the etiology of strangulation of a hernia. Broad rules have been treated as being invariable; the exceptions have not been dwelt on.

An incarcerated hernia is one in which the contents of the bowel involved are so included as to prevent their passage or escape, but in which the blood circulation is not materially impeded.

A strangulated hernia, on the other hand, is one in which the constriction is sufficient to shut off the blood circulation of the part involved. For the practical purposes of this paper it may be stated that strangulation of a hernia depends on the fact that the hernial canal or the neck of the sac has become too small for the mass it contains. This may be due to a narrowing of the canal, or to a swelling of the hernia. Volvulus or constriction of the intestine by bands may occur within the sac exactly as they may take place within the abdomen, but in the majority of cases the strangulation is caused by constriction at the hernial canal or at the neck of the hernial sac.

When the return flow of blood is prevented by constriction, the mass becomes congested and swollen; so strangulated hernia is a condition that augments itself. When the blood circulation has been completely arrested by strangulation, gangrene of the part will soon occur. This is so serious a condition that it may be practically considered fatal, and it should never be allowed to take place. The arrangement of the vascular system of the intestine is such that strangulation of even a small loop of bowel results in a serious derangement of the blood-supply of the entire intestinal tract.

Symptoms and Diagnosis.—The symptoms of strangulated hernia are a logical result of the conditions producing them, and they are absolutely characteristic and distinct, and failure to make a diagnosis is inexcusable. They are those of acute intestinal obstruction with the addition of the local objective and subjective symptoms of the hernia itself. They represent the condition known as abdominal shock followed by intestinal obstruction—later with gangrene of the intestine and general systemic infection. They are in no wise similar to the symptoms of a case of ordinary functional constipation, and it is most important they should be early recognized and properly interpreted, for they indicate a state of affairs which will surely result in death unless spontaneous reduction or surgical interference afford relief.

The prominent symptoms of strangulated hernia are: pain, tenderness, vomiting, obstipation, tympanites, local changes, disturbance of the pulse, disturbance of temperature, facial expression, mental condition, derangement of the capillary circulation.

Pain is usually the first symptom to be noticed. It comes on suddenly, at first radiating from the umbilicus and finally becoming a general abdominal pain. It is colicky in character and severe in degree. There is also local pain about the hernia itself. Tenderness accompanies the pain and is of a corresponding character. Pain and tenderness occur soon after the strangulation, and they continue till reduction is accomplished or until gangrene has taken place.

Sudden cessation of local pain and tenderness without reduction of the hernia indicate the occurrence of gangrene and should be regarded as a grave sign of danger.

Vomiting is usually an early and persistent symptom. At first it is reflex in character, being caused by nerve irritation. Later it becomes projectile in character, and then it is due to obstruction of the intestine and to waves of peristaltic action. At first the vomit consists of the contents of the stomach, later of gastric mucus and bile, and finally of the contents of the small intestine; then it has the characteristic appearance and odor of stercoraceous vomit.

Obstipation will be present from the first to last, though there may be a fecal movement from the lower bowel. Aside from this there will be no passage of feces or gas.

Tympanites will increase till relief is obtained.

The local symptoms, besides those peculiar to hernia, will be those of inflammation, viz.: swelling, heat, redness, pain, and tenderness. To these will be added loss of impulse on coughing, and gradual loss of tympanitic resonance.

The pulse is always disturbed in its action, both as regards its frequency and its volume. Its rate is increased and it becomes irregular, small and thready. As exhaustion takes place the pulse will show evidence of final heart failure.

The temperature is variously disturbed. It is often subnormal from shock. When systemic infection has taken place the temperature will be elevated; and finally it will again become subnormal from exhaustion and collapse.

The facial expression is indicative of severe injury or shock. It has the pinched, drawn, anxious, ashen look known as the Hippocratic face.

The mental condition is that found accompanying any severe abdominal injury. The patient exhibits a queer

* Read in a Symposium on Strangulated Hernia, before the New York County Medical Association, New York City.

combination of fear, and of braggadocio, both evincing anxiety about himself and boasting that he feels perfectly well. This often seems like an ill-defined form of delirium. The capillary circulation is always disturbed, as is evidenced by pallor and by the slight cyanosis of the extremities.

Shock is always present to a greater or lesser degree, and this alone stamps the case as different from one of functional constipation or intestinal derangement, and should lead to a proper diagnosis. It is evidenced by the characteristic pulse, facial expression, pallor and prostration, with the peculiar mental condition described above.

The clinical history of a typical case will be about as follows: The patient who has a hernia—either recently acquired or of long standing—will be suddenly attacked with severe abdominal pain radiating from the umbilicus. Vomiting from nerve reflex may come on as one of the earliest symptoms. From the onset of the attack the patient will show the symptoms of shock. His pulse will be rapid, small and thready. His surface will be pale and ashen with slight cyanosis of the finger tips. The face will appear pale, drawn, pinched and anxious. There will be pain and tenderness in the region of the hernia. The hernia will become swollen, tense and inelastic. It will not give an impulse on coughing. Constipation will be present from the onset, though there may be a discharge from the lower bowel. No gas will be expelled, and the abdomen will become more and more distended. The patient will be greatly prostrated from the beginning, out of proportion to the other symptoms, and if the strangulation is allowed to continue he will pass from a state of exhaustion to one of final collapse. The temperature will vary according to the conditions described above, and it is not an important element of this disease. The vomiting will sometimes be constant, and sometimes it will cease after the first few hours, but when the obstruction has lasted long the vomiting will recur and it will be projectile and of the stercoraceous variety. The tongue will be dry and coated and the breath will be offensive. Hiccough may come on at any time or it may be absent. Spontaneous reduction, surgical relief or death will terminate the case.

If one will consider the mechanics of the condition he will see that the strangulated intestine is in the same plight as a limb or finger is with a tight elastic band around it. The blood circulation is cut off by compression, the resultant swelling causing increasing compression, and it will be readily understood that if relief by mechanical means is neglected, death of the part will ensue. The rule has so few exceptions that it may be stated that strangulated hernia unrelieved is always a fatal condition. Fortunately, the converse, that strangulated hernia properly relieved at a sufficiently early date should never be fatal, is true. The danger lies in delay, and when we take up the question of treatment this is one thing I want especially to urge on all: strangulated hernia should be early recognized and promptly relieved.

Treatment.—We come now to the question of treatment, the rules for which are very simple. Taxis should never be employed when it is possible to operate. All that should be done in the way of expectant treatment is to place the patient in a position which most favors spontaneous reduction of the hernia, to apply cold by means of an ice-bag or cracked ice wrapped up in clothes, to withhold all food from the patient until his condition is relieved, and if these measures do not succeed in accelerating a spontaneous reduction of the hernia, operation should be resorted to before any of the more severe symptoms have set in. That is to say, one should never wait for fecal vomiting, nor until the patient is in a condition of exhaustion. In fact, one should not expect a spontaneous recovery from this condition, for spontaneous recovery is the rare exception, and an operation done on a patient who might have recovered without it will have done no harm if it is properly performed, but a patient who requires operation for this condition will surely die if the operation is not done. The reason that such a large mortality is recorded against surgery of strangulated hernia is entirely owing to the fact that the cases are not properly treated as far as this very point is concerned. Too often do we find that a patient has been subjected to taxis. The manipulations, no matter how gentle, are dangerous and in many cases have hastened the fatal result. In no case can taxis be regarded as free from danger.

Should operation be found necessary, it should be done in the simplest manner possible. As most of these cases are suffering from vomiting due to nerve reflex or to obstruction of the intestinal canal, there may be risk in administering a general anesthetic. Where vomiting is persistent and frequent, local anesthesia should be depended on, for we all recognize the danger of suffocation from administering ether or chloroform to a patient in this condition. Wherefore, it is my rule to administer a full dose of morphia and an ounce of whisky, if the patient be an adult, and then to use cocain locally, for which purpose I employ a weak solution—from .1 to .25 of 1 per cent. The usual preparation of the operation field, as regards asepsis, must be rigidly carried out. After making the incision through the tissues down to the sac, it will become necessary to proceed slowly and cautiously so as to avoid wounding the intestine, which may be adherent to the hernial sac. The incision in these cases should be a free one, permitting thorough exposure of the hernial mass for its inspection and treatment. After opening the hernial sac the band of constriction should be sought with the finger and, either by dissection or by simple incision guarded by special director, the constricting portion of the canal or sac should be divided so as to be fully relieved. As strangulation of the intestine interferes so radically with its circulation, it will be found, a very few hours after the onset in some cases, that the intestine may have become gangrenous. In all cases it will be darkly congested with ecchymotic spots, and in every case judgment will be required to determine whether the intestine is in a condition which will render it safe to return it to the abdomen. If it is gangrenous, then it must not be returned, but must be properly dealt with, while if there is doubt as to whether it is gangrenous or viable after relieving the constriction so that the blood circulation may be restored, one should often wait a long time to determine the question, for it is a fact that an intestine which will be apparently dead will after a time show that its life is intact. This will be evidenced by the appearance of fresh blood in the vessels, and finally the restoration to its natural color.

When the intestine is not gangrenous, after being thoroughly cleansed and inspected to see that there is no spot of perforation and after the operator has assured himself that there is no cause for strangulation remaining, the loop of it should be returned to the abdomen, and if the patient's condition warrants the slight expenditure of time, one of the standard methods for radical cure of hernia should be employed in closing the wound; but if the patient is in a weakened state, so that haste is of all importance, this may be omitted and

the wound closed by ordinary suture; or the canal may be packed with gauze and the patient put to bed.

If the intestine be gangrenous, there is nothing to do but a resection, either repairing the intestine at once or at a later period. To determine whether or not this should be done at once requires the exercise of much judgment, and there is no doubt that one must be largely influenced by the patient's general condition. Should it be decided that the patient is too weak to stand an immediate repair of the resected bowel, an artificial anus should be established by suturing both ends of the intestine to the wound, and the repair can be completed later. But if the patient's strength will warrant it the bowel should be closed at once, by an end-to-end suture either by means of the Murphy button or by the modified Maunsell method.

The subject of technique for these operations and for that for radical cure of hernia can not be dwelt on in this paper.

In closing, the author would like to emphasize certain points:

1. The symptoms of strangulated hernia are distinct, and diagnosis can always be made.
2. Strangulated hernia is a purely mechanical condition and can only be relieved by mechanical means.
3. Taxis is dangerous and should never be employed.
4. Strangulated hernia is a fatal disease if not promptly relieved.
5. Strangulated hernia should never prove fatal if properly treated at a sufficiently early time.

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TREATMENT OF STRANGULATED HERNIA.*

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With the status of aseptic surgery at the present date, the treatment of strangulated hernia has become a matter of great simplicity, and although we still try and always will try reduction by means of taxis in the early period of the strangulation, operation will be more strongly advocated, because of the low rate of mortality in early operation and also because we can and should do a radical cure when conditions allow; thereby guaranteeing the patient not only a recovery from his strangulation, but also a cure of his hernia. Taxis is never practiced by myself for more than a few moments, if no evidence of diminution in size of the hernia be manifest, and never if previously treated by physicians or if upon examination a hard small constriction can be felt at the proximal end of the protrusion, i. e., the site of strangulation. The patient is always given a full dose of morphin hypodermically, to relax the constriction, a full half hour before any taxis is practiced; in addition heat to the full point of toleration is applied over the hernia.

We make it a rule to obtain permission to operate in all cases where an anesthetic is required to relax the strangulation.

Operative Proceedings.—Our incision is always made with a view of performing a radical cure. We have seen several sad results in cases accompanied by vomiting where ether was used and we make it a rule never more to use general anesthesia in this class of cases. These are always operated on with local anesthesia, our preference being a 1 to 2 per cent. solution of eucain B. in normal salt solution. Out of a great number of operations for hernia, both strangulated and radical cases, in which we have used local anesthesia, pain was a prominent feature in one case only, and that was observed while handling the cord, where but sixty minims of a 1 per cent. solution of eucain were used.

Should omentum be the presenting tissue, it is cut off, if matted together, inflamed, or gangrenous, and frequently returned if these conditions do not exist. When the gut is in condition to return, the radical cure of Bassini is practiced. Should the condition of the gut be questionable and the patient's condition allow, hot towels or gauze are applied for a time, even for a full half hour, with a view of proving the propriety or not of returning the gut.

In case of death in part, i. e., a small area, or in the entire lumen of the gut for some length, and the patient's condition not admitting of extended procedure, an artificial anus is established, while the gangrenous gut is left on the abdominal wall after a packing is placed in the abdominal incision. The artificial anus is readily attended to at a later date.

Should the patient's condition warrant, resection is immediately done, anastomosis accomplished by one of the many means at hand and the operation completed so as to make a radical cure. Repair of an artificial anus should not be delayed beyond the time when the patient's general condition will admit of a second operation, especially so when the opening is in the ileum or jejenum, as in these cases exhaustion due to starvation follows rapidly, and the patient is prone to die from the added shock.

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DIAGNOSIS OF STRANGULATED HERNIA.*

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A strangulated hernia is an acute form of intestinal obstruction which exhibits, in addition to the usual symptoms, certain local signs. The results of the strangulation are a sudden and severe irritation of the abdominal plexus of sympathetic nerves, an interference with the return flow of blood, an obstruction to the fecal current and local injury.

The irritation of the peritoneal and intestinal nerves causes reflex vasomotor changes which account for the extreme prostration, the rapid, feeble, low-tension pulse, the shallow respiration, the subnormal temperature, the cold and livid extremities, the cold sweats, the diminished amount of urine, and partly for the vomiting, constipation and pain.

Interference with the venous current accounts for the local signs, which are tension, irreducibility, pain, tenderness, dulness on percussion and absence of impulse.

Obstruction to the fecal current accounts for the constipation, vomiting, tympanites and the presence of indican in the urine.

The severity of these symptoms will vary in different cases, at different stages of the disease, and will be modified by the age and previous condition of the patient's health. Should a recent hernia be strangulated, all the symptoms will be very marked, and particularly so in a previously robust young individual. In inguinal hernias they are more acute than in femoral, and in enteroceles more than in epiploceles. If the strangulation is not relieved, most of the symptoms become aggravated or modified. The strangulated loop of intestines will become gangrenous, perforated, and a diffuse inflammation of the hernial mass with general septic peritonitis will set in. After perforation is present the hernial mass becomes

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swollen, more painful and tender, and if the patient survives long enough, the skin over the hernia will be red and finally break down. Of the symptoms of general septic peritonitis, suffice it to say that frequently the patient will cease to complain of pain, the vomiting will be replaced by distressing singultus and the patient will present the picture of one dying from ptomain poisoning.

The cardinal symptoms of a strangulated hernia are those of shock or collapse, pain, vomiting and constipation. Pain is one of the first to appear and is referred to the hernia itself or the umbilical region. It is colicky in nature and is due to injury of the peritoneum, distention of the intestines and very active peristalsis.

Vomiting is at first a reflex, but if the case goes on without relief it is caused by the obstruction to the natural current of intestinal contents. It is frequently repeated, but affords no relief and gives rise to great thirst. At first only the contents of the stomach are ejected, then some bile-stained fluid, and finally a very offensive, dirty liquid with a fecal odor. This stercoraceous fluid is from the distended intestines in which it has undergone decomposition. From the very outset there is constipation, which comes on suddenly and is complete. There is no escape of flatus, though an enema may bring down some fecal matter from below the seat of obstruction. This absolute constipation is due to reflex paralysis of the intestines and not to the obstruction alone.

Intestinal paralysis promotes stagnation of fluid, which, being rich in bacteria, now undergoes decomposition and gives rise to tympanitic distention.

Indol, not being discharged from the intestinal canal, is changed into indican and is found in the urine. The amount of urine is diminished. This is due to the low arterial pressure brought on by irritation of the abdominal plexus of nerves.

The local signs of a strangulated hernia have been given above, and it only remains to give the rationale of some of them.

The hernia is not reducible, on account of the increase in volume caused by venous stasis. This is also responsible for the exudation of serum into the sac, which gives rise to increased tension and a dull percussion note. The amount of exudate will increase as the case goes on, and in time the tension and dulness will be more pronounced. The presence of tension and the absence of an impulse are characteristic signs of a strangulated hernia; they are not found in obstructed, simple, irreducible or inflamed hernia. While vomiting and constipation are symptoms of an obstructed or an incarcerated hernia as well, they are not so severe nor persistent, and yield to appropriate treatment; furthermore, constitutional symptoms are not pronounced, and tenderness of the hernia is absent. An inflamed hernia, on the other hand, is tender and presents the symptoms and signs of a local inflammation. There will usually be a rise in the temperature, but rarely shock or collapse; vomiting is frequently absent, and constipation, if present, yields to simple treatment.

If we bear in mind that in strangulated hernia marked irritation of the abdominal sympathetics is present, and that this gives rise to pronounced constitutional symptoms, the diagnosis will readily be made. Difficulty will arise if the strangulation occurs in one of the rare and obscure varieties, such as obturator, sciatic or lumbar hernia.

If symptoms of acute intestinal obstruction arise in the presence of a tumor of doubtful nature, in one of the hernial regions, the benefit of the doubt should be given to the patient and the case treated as one of strangulated hernia.

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RADICAL CURE OF STRANGULATED INGUINAL AND FEMORAL HERNIAE.*

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To all intents and purposes this means attempting the radical cure of any inguinal or femoral hernia operated on primarily for the relief of strangulation. I take it for granted that the hernia in either locality has been cut down upon, the sac has been opened, the constriction found and divided, complications dealt with successfully and the gut found in a condition to be returned to the abdominal cavity, either with or without an anastomosis having been performed, and that the condition of the patient and parts is such as to warrant an attempt at permanent closure of the wound with primary union very probable.

INGUINAL HERNIA.

Our first concern is with the sac itself. This should be carefully isolated from the spermatic cord. If the sac is an acquired one, this will be an easy matter, if congenital, more difficult. In separating it from the vas deferens, the former may be torn through. Tearing a slit in the sac, even though it extends into the abdomen, need cause no apprehension. If it is not obliterated by the ligature it can be closed by a running suture of catgut.

Free the neck of the sac, as well as the parietal peritoneum, about the internal ring. This will be facilitated by dividing the internal oblique and transversalis muscles and the transversalis fascia outward, just above and parallel with Poupart's ligament, to its outer and middle thirds. Then, while making strong traction on the sac, ligate its neck as high up as possible, with chromic gut, or if the pedicle is very thick, with silk. The object of lossening the peritoneum around the internal ring, and of ligating the hernial sac under considerable tension as far up as possible, is to obliterate the funnel which leads into the neck of the sac.

Cut the sac away. Some advise its retention, and by rolling or plaiting form a pad which is placed over the internal ring. This is supposed to serve two purposes: to form a barricade strengthening the ring, and to produce an elevation in the peritoneum at the place where a depression had formerly existed, and thus prevent a return of the hernia.

I am opposed to this plan of treatment because such a pad of tissue over the ring will act as a wedge to reopen that orifice, and any bulging which at first was formed toward the abdomen will become converted into a depression into which the intestine can easily enter. It is better to cut the pedicle short and guard against a return of the hernia by a proper repair of the abdominal walls, for in them lies our only permanent source of strength. In other words, the more closely we can imitate the construction in the normal body, the more lasting will be our results.

The disposition of the cord is next in order. Numerous large veins, much loose areolar tissue, thickened cremaster muscle and fascia need to be removed, and a

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thick, loose, vascular cord converted into a thin, firm one. Following the suggestion of Halsted, all the veins but one or two should be removed, with the excess of loose tissue.

The closure of the abdominal wall and formation of the inguinal canal come next. In children the internal is nearly behind the external ring. The inguinal canal is very short or does not exist. By the growth of the pelvis the rings are separated and the inguinal canal is formed by the internal ring being carried outward until it assumes its adult position, above the middle of Poupart's ligament. If a hernia exists, the infantile condition is reproduced—either as a result of arrested development or from the traction of the neck of the sac—and the internal ring is found partially or wholly behind the external, the inguinal canal is obliterated and the examining finger passes through what appears a single opening into the abdominal cavity. This abnormal condition must be changed, by making a new internal ring beyond the middle of Poupart's ligament and reconstructing an inguinal canal.

With this end in view, and to afford room for the isolation of the hernial sac the first step has already been taken by dividing the internal oblique and transversalis muscles with the transversalis fascia outward, as already given. Arrest all bleeding. Draw the cord to the outer angle of this incision and hold it there by a blunt hook or a loop of silk. Suture, from without inward, behind the cord, the internal oblique and transversalis muscles and the transversalis fascia, the conjoined tendon and the outer edge of the rectus muscle when this is lax, to Poupart' ligament.

These sutures should be of chromic gut, No. 1 or 2, placed about half an inch apart and inserted according to the method employed by Bassini, as described by Dr. E. W. Andrews.[1] He says: "Each stitch enters the transversalis and internal oblique 1.5 cm. from their lower margin and makes exit at that margin. The needle then penetrates the shelving edge of Poupart's ligament from within outward."

The first suture is the most important, as on its placement the size of the new internal ring will depend. It should be placed close enough to the cord that when tied the fibers of the muscles, and fascia, will hug the cord tightly but there will be no obstruction to the circulation in it.

We have now reformed the internal ring and the posterior wall of the inguinal canal. Place the cord along the line of the normal inguinal canal and unite the aponeurosis of the external oblique over it by sutures of chromic catgut, No. 1 or 2, inserted interruptedly or continuously. The external oblique is closed as far as the spine of the pubes, where an opening is left just large enough for the cord to pass through without constriction. Finally, the skin is brought together by a subcutaneous suture of chromic gut No. 0.

The plan suggested above combines the favorable features of the operations suggested by two well-known surgeons, without the disadvantage of either. For instance, Halsted's plan of forming a new internal ring and of lessening the size of a large varicose cord is based on correct principles, viz., conforming to the natural construction, but he deviates from this and introduces a structural weakness when he brings the cord out through the external oblique and forms the external ring directly in front of the internal, with obliteration of the normal inguinal canal. This establishes a condition most favorable for the return of a hernia. Bassini's operation is improved by adding to it the reconstruction of a new internal ring over the outer and middle thirds of Poupart's ligament, by diminishing the size of the spermatic cord and substituting an absorbable for a non-absorbable ligature and suture material.

I would like to protest against the use of any non absorbable material for ligatures or sutures in this work. Silk is the least, but silkworm gut and silver wire are the most, objectionable. They add a fictitious strength, but really become a source of weakness because of the probability that, even though buried at the time, they will act like other foreign bodies—be pushed toward the surface, and will finally require removal.

Primary union is most essential to the success of any operation for radical cure of a hernia. Hence, everything which can prevent or retard it must be eliminated.

We take it for granted that the operation is performed with the utmost regard for aseptic details. Aside from this there are certain defects of technique that tend to interfere with the desired result. One of these is too much and rough handling of the tissues. Another is a failure to remove masses of fatty tissue which may either undergo necrosis or mechanically prevent union by remaining between the sutured tissues. Another very important oversight is a failure to completely arrest all oozing before starting to suture the parts. Close apposition of the divided muscles is necessary, but, at the same time, this must be secured by using not too many sutures, for if they are tied thick and close together necrosis of the sutured line may result.

In the female the operation for indirect inguinal hernia is carried out along the same lines as just given, and no special mention is needed for any one part. The operation can be done with greater ease and the result will more often be permanent. That is, it will be if Nature's plan is copied in repairing the parts.

Directly bearing on this point is the frequency of hernia following Alexander's operation for shortening the round ligaments. Such an undesirable occurrence is due to a failure to properly reproduce the normal construction.

FEMORAL HERNIA.

While herniæ do not take place at the femoral opening, with the same degree of frequency that they do at the inguinal, the attempt at radical cure is attended with greater natural difficulties and more frequent relapses. The explanation of both facts is based on the anatomic construction of the parts.

To cure a femoral hernia theoretically, we have only to bring the inner end of Poupart's ligament down to the horizontal ramus of the pubic bone, and fasten it there so as to closely embrace the femoral vein and obliterate the femoral opening and canal by deeply placed sutures. No matter how skilfully this is done, there remains alongside the obliterated ring and canal, the large femoral vein which can not be moved, and which will yield to intra-abdominal pressure. Such yielding to pressure stretches the union between its sheath and the ligament, and thus a thin, weak spot is developed which predisposes to the return of the rupture. Many operations have been practiced for overcoming this inherent structural difficulty. I will not enumerate them here, but only mention the best plan.

The sac should be separated from the surrounding parts, the neck freed well into the abdomen, a ligature applied as high as possible and the sac removed. Suture the crural arch and Poupart's ligament firmly to the pectineal fascia, close to the iliopectineal line. These sutures are interrupted ones, of chromic gut No. 2, and

[1] Medical Record, Oct. 28, 1899.

are applied from the vein inward. The one next to the vein needs the most care for its insertion, so that when tied the overlying ligament will not compress it. In the same manner close the hernial tract and reunite the deep fascia; finish the operation by suturing the skin with a single strand of No. 0 chromic gut applied subcutaneously.

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STRANGULATED HERNIA IN CHILDREN.*

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Strangulated hernia in infants and children is by no means so rare as one might be led to suppose from various text-books and monographs on hernia. I have operated on eight patients under the age of 2 years, with one death. The one fatal case was an infant of 8 weeks, and almost moribund at the time of operation. Strangulation had existed for two days. The patient was operated on after midnight, in a poorly-lighted room and under most unfavorable circumstances. The cecum and appendix were present in the sac. The patient rallied after operation, but died two days later. This is the only case in which no attempt at radical cure was made. It was very interesting to note that a considerable portion of my cases were of the cecal variety. In four, or 50 per cent., the sac contained cecum, and in three of these four the appendix also was found. In one case the appendix was gangrenous and it was thought best to remove it. In the others the appendix seemed viable and was returned to the abdominal cavity. Five of my patients were under 1 year of age.

Tariel, of Paris, has made the most complete collection of cases of strangulated hernia in infants. He states that in 128 cases the cecum and appendix were found in only eight.

I believe that the duration of the strangulation is of special importance in hernia in infants. In my series the longest duration was forty-eight hours, and the shortest twelve. There was only one case in which a bacteriologic examination was made of the fluid contained in the hernial sac, and this was negative.

Most writers on strangulated hernia have stated that in the greater proportion of cases the constriction was due to the neck of the sac. Marsh, in 1874,[1] stated that of 32 cases of strangulated hernia in infants, strangulation was due to the neck of the sac. And Tariel states that in 128 he found the neck of the sac to be the cause of strangulation in 58. Personally, I believe this view to be incorrect; in the great majority of instances Tariel and Marsh based their calculations on cases operated on prior to the introduction of modern methods. By these older methods it was impossible, in the small incisions employed, to accurately determine the location of the cause of the constriction. By the modern methods, Bassini's and Halsted's, the aponeurosis of the external oblique is freely opened, and only when this is done is it possible to state definitely whether the strangulation is due to the neck of the sac or the external ring. In every one of my own cases the aponeurosis was freely opened, and this alone was sufficient to render reduction easy, showing that in not a single case was the neck of the sac the cause of constriction. I believe that with scarcely an exception herniotomy in all cases of strangulated hernia in infants and children may be supplemented by an attempt at radical cure. I have employed this procedure in all my cases, with the exception of the one nearly moribund at the time of operation, and in no case up to the present time has there been a recurrence.

I should like to add a word in regard to the diagnosis of strangulated hernia in infants and children. This is not unusually difficult. There is, however, one condition, viz., hydrocele of the cord, which very frequently gives rise to confusion. The history of the case and general condition of the patient will, as a rule, make the diagnosis clear, although I have seen a number of cases in which prolonged taxis, under anesthesia, has been resorted to for simple hydrocele of the cord.

A diagnosis of strangulated hernia having been made, I believe that gentle taxis, not longer than two or three minutes, should be tried. If this fails, application of hot cloths for from ten to twenty minutes should be resorted to, and if a second attempt to reduce it under gentle taxis fails, chloroform or ether should be administered and preparations made for immediate operation. The relaxation following anesthesia will occasionally render reduction possible without operation, but if this fails, operation should be performed.

I have personally known of three deaths from strangulated hernia in infants as the result of temporizing. One of these was an infant aged 8 months, who was brought to the Hospital for Ruptured and Crippled in *extremis*. Operation was refused. The after-history I am unable to state, but death undoubtedly occurred within a short time.

In another case, a patient aged 1 year was brought to the hospital. Prolonged taxis had been tried prior to admission. Very moderate taxis was again made by the house surgeon, with the result that the hernia was easily reduced. The infant, whose condition on admission was by no means good, rapidly grew worse and died within twenty-four hours. No autopsy was permitted.

These personal cases are cited to furnish abundant evidence that the chief danger lies in deferring operation.

*Read in a Symposium on Strangulated Hernia, before the New York County Medical Association, New York City.

[1] St. Bartholomew Hospital Reports.

CENTRIFUGAL ANALYSIS OF URINE.

BY CHARLES W. PURDY, LL.D., M.D.
CHICAGO.

The immense value of urinary analysis in its interpretations of physiologic and pathologic processes may now be said to be fully appreciated by the practical clinician. The disturbance of metabolism, the derangement of the physiologic balance, the disorder of secretion and excretion, indeed the tendency toward death or recovery are often more accurately indicated by careful scrutiny of the urine than by any other available means. The many and important improvements in our methods of analysis have done much to place this subject within the ready reach of the advanced physician. It must, however, be admitted that, notwithstanding the degree of advancement attained in expert laboratory work, there remains much to be accomplished in the way of rendering many of the processes more expeditious and ready, so that they may be made more generally available by the busy physician in practical work. Up to the present time the more rapid and ready processes in uranalysis are only available for a few of the leading constituents of the urine—and these mostly regarding qualitative rather than quantitative data. It therefore happens that the practical clinician for the most part is only able to make a partial and therefore incomplete analysis of the urine in a few of his more important cases, whereas uranalysis should properly constitute a routine of complete investigation in all details of the urine in all

ses, at least occasionally. It is indeed only when this practice is fully established that we can expect to thoroughly grasp the many lessons yet to be learned of physiologic disturbances, and pathologic processes, which are reflected in the various and varied urinary changes. Fully realizing the important bearing of these facts on clinical medicine, the writer has devoted much time and experimentation along these lines during the last decade. Unfortunately the amount of time, thought and practical experiment necessary to reach practical results of value relative to many of these problems is so great that few unacquainted from practical experience in the matter would be prepared to believe the extent of the details of work or the sacrifice of time that is required. It may be stated then that for the most part practical results of value in this direction are only possible after years of investigation, for indeed it is after all only methods that withstand the test of years of practical application that finally become entitled to rank as standard.

The writer's rapid quantitative method for sugar in the urine was introduced to the profession over eleven years ago, and although it can only be said to be an improvement or modification of one or two well-known methods previously in use, yet it was only perfected after eight years of study and experiment. The writer's rapid quantitative method for albumin in the urine was only perfected after four years of labor and experiment, notwithstanding no inconsiderable amount of laboratory facilities and clinical material were at hand for practical observation.

It is now over five years since the writer first proposed the quantitative determination of chlorids, phosphates and sulphates in the urine by the centrifugal method[1]. Nothing further was claimed for this method at the time of its introduction, further than a rapid approximate bulk measurement of the precipitates, because the method was then new and untried save in the writer's laboratory, and it seemed a radical departure from methods better known and considered more exact, such as titration, weighing, etc. Moreover, only bulk percentages had then been worked out in the cases of chlorids, phosphates, sulphates, and albumin, without any attempt having been made to give corresponding gravimetric values, much less the actual corresponding values in Cl, P_2O_5 or SO_3 from the bulk percentages of these combined as salts in the sediment. Since the introduction of the centrifugal method, however, it has been demonstrated, in the writer's laboratory, that centrifugal analysis of the urine, if carried out by refined methods and improved apparatus, may readily reach results that are entitled to rank with older standard methods, the gravimetric and volumetric included, and that bulk percentages of sediments may be worked out in their equivalent values of their elements, not only with precision, but also with a rapidity and facility that at once renders this method of the greatest practical value in clinical work. Indeed, the amount of practical information that this method is capable of laying before the clinician without loss of time can not but prove of inestimable value in his practical work.

The essentials for reaching these results are in no way complex or difficult to comprehend, much less to put into actual practice in the most ordinary laboratory. The equipment should consist of an efficient motor capable of the uniform standard speed, possessing a standard radius of arm and tube (6¾ inches); accurately graduated percentage tubes, and a gauge for regulating the speed. The writer's improved electric centrifuge fulfils all the requirements for accurate work, and is now so well known that its description here seems unnecessary. It may be mentioned here, however, that very recently a further improvement in the writer's percentage tubes has been adopted as follows: The points have been drawn out finer, and the first 5 c.c. have been more minutely graduated in order to indicate measurements in 0.25 percentages instead of 1 per cent., as before[2]. This modification was found necessary in order more accurately to determine quantities less than 1 per cent. of certain urinary constituents when measured in bulk percentage—such, for instance, as the sulphates of the urine, which normally fall somewhat below 1 per cent.

TABLE SHOWING THE BULK PERCENTAGE OF SILVER CHLORID (AgCl) AND THE CORRESPONDING GRAVIMETRIC PERCENTAGES AND GRAINS PER FLUID OUNCE OF NaCl AND Cl.

Bulk per cent. of AgCl.	Per cent. of NaCl.	Gr. per oz. of NaCl.	Per cent of Cl.	Gr. per oz. of Cl.	Bulk per cent. of AgCl.	Per cent. of NaCl.	G. per oz. of NaCl.	Per cent. of Cl.	Gr per oz. of Cl.
.25	0.03	0.15	0 02	0.1	8.	1.04	4 98	0.63	3.02
.5	0.07	0.31	0.04	0.19	8.5	1.1	5.29	0.67	3.22
.75	0.1	0.47	0.06	0.28	9.	1.17	5 6	0.71	3.40
1.	0.13	0.62	0 08	0.38	9.5	1.23	5.91	0.75	3.6
1.25	0.16	0.78	0.1	0.48	10.	1.3	6.22	0.79	3.79
1.5	0.19	0.93	0.12	0.57	10.5	1.36	6.53	0.83	3.97
1.75	0.23	1.09	0.14	0.66	11.	1.43	6.84	0.87	4.16
2.	0 26	1.24	0.16	0.76	11.5	1.49	7.2	0.91	4.35
2.25	0.29	1.41	0.18	0.85	12.	1.56	7.46	0.95	4.54
2.5	0.32	1.56	0.2	0.96	12.5	1.62	7.78	0.99	4.73
2.75	0.36	1.71	0.22	1.04	13.	1.69	8.09	1.02	4.92
3.	0.39	1.87	0.24	1.13	13.5	1.75	8.4	1.06	5.11
3.25	0.42	2 02	0.26	1.23	14.	1.82	8.71	1.1	5 29
3.5	0.45	2.18	0.28	1.32	14.5	1.88	9.02	1.14	5.49
3.75	0.49	2.35	0.3	1.42	15.	1.94	9.33	1.18	5.67
4.	0.52	2.49	0.32	1.51	15.5	2.01	9.65	1.22	5 86
4.25	0.55	2.64	0.34	1.61	16.	2.07	9.94	1.26	6.06
4.5	0.58	2.8	0.35	1.7	16.5	2.14	10.27	1.3	6 24
4.75	0 62	2.96	0.37	1.8	17.	2.20	10.51	1.34	6.43
5.	0.65	3.11	0.39	1.89	17.5	2.27	10.87	1.38	6 62
5 5	0.71	3.42	0.43	2.09	18.	2.33	11.2	1.42	6.81
6.	0·78	3.73	0.47	2.26	18.5	2.4	11.51	1.46	7.
6.5	0.84	4.05	0.51	2.46	19.	2.46	11.82	1 5	7 19
7.	0.91	4.35	0.55	2.62	19.5	2.53	12.13	1.54	7.38
7.5	0.97	4.67	0.59	2.84	20.	2.59	12.44	1.58	7.56

TABLE SHOWING THE BULK PERCENTAGES OF URANYL PHOSPHATE $H(UO_2)PO_4$, AND THE CORRESPONDING GRAVIMETRIC PERCENTAGES AND GRAINS PER FLUID OUNCE OF P_2O_5.

Bulk per cent. of $(UO_2)_2P_2O_7$.	Per cent. P_2O_5.	Gr. per oz. P_2O_5.	Bulk per cent. of $(UO_2)_2P_2O_7$.	Per cent. P_2O_5.	Gr. per oz. P_2O_5.
.5	0.02	0.1	11	0.14	0 67
1.	0.04	0.19	12	0.15	0.72
1 5	0.045	0.22	13	0.16	0 77
2.	0.05	0 24	14	0.17	0.82
2.5	0 055	0.26	15	0.18	0.86
3.	0.06	0 29	16	0.19	0.91
3.5	0.065	0.31	17	0.2	0.96
4.	0 07	0 34	18	0.21	1.
4.5	0.075	0.38	19	0.22	1.06
5.	0.08	0.38	20	0.23	1.1
6.	0 09	0 43	21	0 24	1.15
7.	0.1	0.48	22	0.25	1 2
8.	0.11	0.53	23	0 26	1.25
9.	0 12	0.58	24	0.27	1.3
10.	0.13	0.62	25	0.28	1.3

TABLE SHOWING THE BULK PERCENTAGES OF BARIUM SULPHATE ($BaSO_4$) AND THE CORRESPONDING GRAVIMETRIC PERCENTAGES AND GRAINS PER FLUID OUNCE OF SO_3.

Bulk per cent of $BaSO_4$.	Per cent. SO_3.	Gr. per oz. SO_3.	Bulk per cent. of $BaSO_4$.	Per cent. SO_3.	Gr. per oz. SO_3.
.125	0.04	0.19	2.25	0.55	2 64
.25	0.07	0.34	2.5	0.61	2.93
.375	0.1	0.48	2.75	0 67	3.22
.5	0.13	0.62	3.	0.73	3.5
.625	0.16	0.77	3.25	0.79	3.79
.75	0.19	0.91	3.5	0.85	4 08
.875	0.22	1.06	3.75	0.91	4.37
1.	0.25	1.1	4.	0.97	4.66
1.25	0.31	1.49	4.25	1·03	4.94
1.5	0.37	1.78	4.5	1.09	5 23
1.75	0.43	2.06	4.75	1.15	5.52
2·	0.49	2.35	5.	1.21	5.81

For the determination of chlorids, phosphates and sulphates of the urine by the centrifugal method, the foregoing standard and tables are now adopted in the writer's laboratory, after an extended series of practical observations sufficient to establish their accuracy.

Process.—The double arm of the motor is employed, carrying four tubes. Three of the percentage tubes are filled to the 10 c.c. mark with the urine—this having been previously filtered if not perfectly clear. To the first tube is added 1 c.c. of strong nitric acid, and 4 c.c. of standard solution of silver nitrate[3]. To the second tube is added 2 c.c. of 50 per cent. acetic acid and 3 c.c. of uranium nitrate solution[4]. To the third tube is added 5 c.c. of the standard barium chlorid solution[5]. The tubes are next inverted three or four times to insure mingling of the urine and the reagents, and then *allowed to stand aside for three minutes,* to secure complete precipitation. In order to balance the arm of the centrifuge, the fourth tube is filled to the 15 c.c. mark with water. The centrifuge is next operated at a speed of 1200 revolutions a minute for exactly three minutes. The tubes are then removed and the percentage of precipitates is read off on the scale. No. 1 gives the bulk percentage of chlorid of silver (AgCl); No. 2 the bulk percentage of uranium phosphate $H(UO_2)PO_4$, and No. 3 the percentage of barium sulphate ($BaSO_4$). The bulk percentages are converted into their equivalent values of percentages by weight and grains per ounce by means of the following tables; and from these the grains or grams of total chlorin (Cl), phosphoric acid (P_2O_5) and sulphuric acid (SO_3) are readily calculated by a glance at the tables. The results are more accurate if the urine be diluted in the cases of chlorids and phosphates if the bulk percentage of these exceed 15 per cent.

The time required to carry out these three quantitative determinations should not exceed ten minutes, even when the total Cl, P_2O_5, and SO_3 for twenty-four hours is calculated from the accompanying tables.

The writer is greatly indebted to his laboratory assistant, Mr. Carl Irenaeus, for his valuable assistance in carrying out the details of the many experimental observations necessary to establish the accuracy of the method herewith brought forward.

57 East Twentieth Street.

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1. Practical Uranalysis and Urinary Diagnosis, 1st ed., 1896.
2. Eimer & Amend, 205-211 Third Ave., New York City, manufacture and supply the writer's improved standard percentage tubes.
3. Standard nitrate of silver solution consists of nitrate of silver, 5i; distilled water, 3i.
4. Standard nitrate of uranium solution consists of nitrate of uranium, 100 gr.; distilled water, 3iv.
5. Standard barium chlorid solution consists of barium chlorid, 4 parts, strong HCl, 1 part; distilled water, 16 parts.

CONTRIBUTION TO TREATMENT OF SPINAL CARIES, WITH SPECIAL REFERENCE TO THE WOVEN WIRE CORSET.

BY GEORGE R. ELLIOTT, M.D.

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For many years the profession has been traveling along two well-defined roads in the mechanical treatment of spinal caries or Pott's disease of the spine—one, that of anterio-posterior support or leverage fixation, so clearly described and skillfully employed by Dr. C. Fayette Taylor nearly half a century ago. The force and weight given to it by Dr. Taylor is felt to-day in the number of modifications of his brace employed by expert orthopedic surgeons the world over. His name will live as long as surgery itself. The second road has a much larger body of travelers. I refer to the partial suspension and fixation treatment which, through indefatigable work and energy, was brought to the foreground by another veteran surgeon whose name can never be forgotten. The exponent of partial suspension and fixation, Dr. Lewis A. Sayre gave us in the form of the plaster-of-Paris jacket.

We constantly find allusion made to these ideas having been known many, many years ago and put into practice. Many of us doubtless have in our own libraries books that even give us actual illustrations of these two methods of treatment. We know that Ambrose Paré in 1579 used the corset idea in steel form; that in the seventeenth century Von Nuck employed suspension apparatus for the relief of the disease in question, and that in 1700 Heister devised an anteroposterior support; while in 1764 Levacher originated the jury mast, and we have seen the cuts in fine wood and copper engravings of the old school. The profession knows all of this, but it remained for Drs. Taylor and Sayre to rediscover and add some things. I believe I come very near Dr. Sayre's own remark when I use the word "rediscover."

If we think for a moment, we will readily come to the conclusion that in the *mechanical line especially,* we are not surprised in finding ideas met from a mechanical standpoint in bygone ages, much as the surgeon of common sense meets indications to-day.

While, for example, it is generally conceded that our common table-fork was unknown prior to the time of Queen Elizabeth, if we wander through the collection of articles recovered from the ruins of Pompeii we find the same idea expressed in an instrument having a knife at one end and a prong at the other. In the Halstadt period, 1500 years prior to this, we meet with the same idea. It remained for Elizabeth to add the other prong, but that other prong revolutionized the table etiquette of the world. So in mechanical surgery, if we wish to travel back in search of mechanical exponents of ideas we will find ourselves frequently, at least, in the company of Hippocrates. In certain of the mechanical appliances of orthopedic surgery it remained for Drs. C. Fayette Taylor and Lewis A. Sayre to add the "other prong." This took the form, from the hands of one, of a modernized brace, and from the hands of the other of a plaster-of-Paris corset and perfected jury mast, and these revolutionized the mechanical therapeutics of the world.

Let us leave the brace for the moment and confine ourselves to the corset idea or moderate suspension with partial fixation. I say "partial" for it is impossible to lock up the spine as we lock up the leg or arm, for example. We have seen corsets made of almost every conceivable substance known to man, come into the field. Among these are wood, paper, steel, leather, celluloid, aluminum—all founded on the same mechanical principle—all firm, unyielding, hard. The originators of these various supports, while admitting the unquestionable value of the plaster-of-Paris jacket, which is now in use from one end of the world to the other, sought to get something cleaner, more durable, more elegant and lighter, if possible. The comfort of the patient was considered as only secondary to the perfect support itself. The result of all this energy has given us a very complete line of supports, and in the hands of competent surgeons excellent results.

While the corset principle, or that of moderate extension with fixation, is the leading principle of mechanical treatment of spinal caries, I do not wish to deny that

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the leverage fixation principle of the brace properly carried out in expert hands yields remarkably good results. The truth lies to a certain extent between the views so eagerly held by the two schools, and I further believe this capable of demonstration.

In studying my cases under treatment in hospital practice, where I have used the plaster-of-Paris jacket almost entirely, intelligent adults requiring support invariably have said that they wanted more pressure on the sides and beneath the prominences. This was partially accomplished by pressing in the plaster, while yet soft, with the ball of the thumb or pads. In private practice I accomplish this end by making a cast and modelling it, and then make the jacket over the corrected cast. We thus get something that the brace does in addition to the extension gotten by the corset. I expect to publish this more fully later and hence only allude to it now.

Some years ago Dr. Milton J. Roberts, formerly professor of orthopedic surgery at the New York Post-Graduate Medical School and Hospital, with whom I was associated in private practice and as lecturer on orthopedic surgery at the same school, and whose ingenuity did so much for the progress of mechanical therapeutics, believed in the principle laid down many years ago by Dr. Davis, that extension *is* fixation. This can be demonstrated in knee-joint disease or hip disease, by painless motion being permitted when the limb is carefully extended. Acting on this principle Dr. Roberts devised apparatus for almost every joint of the body, among them a woven wire corset for the spine, which forms the basis of this contribution. I carefully followed the development of the support step by step, working with him through a long experimental trial. Difficulty after difficulty was overcome until we felt we had a support more satisfactory for the great majority of patients than any before the profession. The great problem to overcome was the difficulty in keeping up the extension which we have seen means fixation, owing to the yielding nature of the material, and this to my mind was never quite satisfactorily accomplished at the time of Dr. Roberts' untimely death six years ago. Since then I have faithfully labored to perfect the support I so thoroughly believed in, and I have carefully refrained from publishing anything, prefering to thoroughly test the efficacy of the support which had been called in question and wait until I was certain that I could present to the profession a support as nearly ideal as anything in this line can be called ideal. By ideal is meant: 1, satisfying mechanical problems and, 2, satisfying the comfort and esthetic requirements of the patient.

No boast is intended in saying that, did medical ethics allow, I have many patients to-day wearing the support who would only too willingly testify to its superiority in every way over wood, paper, aluminum, leather, plaster and braces they have worn. I do not wish to stray from my object to keep close to the naked details, leaving the rest to your judgment.

THE SUPPORT OF THE CORSET.

To fully satisfy myself on this point, and being thoroughly familiar with the requirements of patients suffering from acute Pott's disease, acquired from a long experience in hospital orthopedic practice in the use of the plaster-of-Paris corset, I selected cases from my private ones. Those were chosen requiring maximum support due to the disease being in a state of activity, or, in some few cases, where partial ankylosis had taken place but where the deformity was very great—such requiring approximate maximum support. Further, my studies were made on patients only who had worn rigid apparatus applied by experts whose names are familiar to you all.

Most of our patients suffering from acute Pott's disease, I need not tell you, are children, but here we are denied any expression of opinion beyond that of positive pain and discomfort. I then selected *observing* adults, and those of you who have treated many adults suffering from Pott's disease who have worn appliances before coming to you will not question the word "observing." I know of no class of patients in the domain of medicine or surgery where the patients' observations are more valuable to the surgeon. We know that many of them become very expert and know at once whether they are getting proper support or not, and can tell if they are in the hands of practitioners experienced in the management of their disease. If I could properly support the cases I selected—those requiring maximum support—the question would be settled. The great majority of patients require support very far from the maximum.

I will not take your time in giving in detail the history of many of these cases.

Dr. M., aged 40 years, applied to me for treatment of lower dorsal caries, in October, 1897. He was then wearing a Taylor brace, which he had worn for some months, under expert advice. Prior to this he had been wearing a Shaffer brace. His disease was of one year's duration. When he came to me he was unable to stand with the brace applied, without holding on to something with his hands, and he complained of abdominal pains. He further manifested some compression paralysis, as evidenced by exaggerated knee-jerks and weakness of the leg muscles. Examination revealed a tubercular involvement of the tenth and eleventh dorsal and first lumbar vertebræ. He said that the deformity was increasing in spite of the brace—"a new lump," as he expressed it, had appeared during the past month. I found that in suspension it required a removal of forty pounds, registered by my suspension apparatus, to give him maximum relief.

This patient further had marked evidence of tubercular involvement of one lung, as evidenced by free broncho-purulent expectoration, moist râles, circumscribed area of dulness, temperature rise, and tubercle bacilli. Here was indeed a complication. Few more serious conditions of the disease have ever come under my experience in hospital or private practice.

I applied a wire support, but found it necessary to make a new one after one month. After the application of the second support, modified slightly, he obtained complete relief and improvement which has continued steadily followed. The deformity, which was increasing, was held in check and has improved. All pain has disappeared, together with all signs of muscular weakness of the lower extremities. He is still wearing the same support applied eighteen months ago. He walks briskly and has attended to his business throughout. I may add that he had been taking carbonate of creosote in large doses prior to my seeing him, and still continues to take it. He requires much less support now than he did eighteen months ago.

Here was a condition to test the efficacy of any support in a most intelligent professional man, keenly observing and critical and, from long suffering, irritable to a degree.

A young woman, aged 35 years, was referred to me by Dr. Williams of New York. On Dec. 2, 1898, she applied to me with caries of the four lower dorsal ver-

tebræ. The disease was of several years' duration, the "bos" very pronounced. She had worn braces, plaster-of-Paris jackets, and when I saw her was wearing a Hawk's paper jacket—all these had at different times been applied by specialists. The supports so far had failed in getting in between the thorax and pelvis on the right side, resulting in her continually settling to that side. She was suffering from lack of support, in consequence, and symptoms of a progressive paralysis were beginning to show themselves. She suffered from twitching of the leg muscles and was obliged to go to bed every few days.

I modeled her cast with the usual great care, and succeeded in applying a support so that the thorax was somewhat held away from the pelvis. The effect of this was marked in relieving her symptoms. The getting in between the thorax and brim of the pelvis had been the difficulty that so far surgeons had been unable to overcome in her case. She immediately began to improve. All symptoms of lack of support disappeared, together with the symptoms of compression paralysis and disappearance of twitching of the leg muscles. She wears the support with great comfort, and is able to be up and about all day, attending to her usual domestic and social duties.

A young woman, aged 24 years, was referred to me by Dr. Nunn of Savannah, Ga., for treatment of dorsal caries involving the sixth, seventh, eighth and ninth dorsal vertebræ, with very great deformity. She had been afflicted since childhood and had had repeated spinal abscesses. She was of a nervous temperament and the skin on the trunk was exceedingly hyperalgesic. She had tried to wear a great variety of supports during her long period of suffering, among them plaster-of-Paris and wood corsets applied by New York specialists. She was unable to wear an absolutely rigid appliance even from the hands of experts, preferring, as she expressed it, the suffering incident to her disease to that of the hard supports. As a result symptoms of lack of support manifested themselves continually. From time to time she had twitching and spasms of the leg muscles, and weakness and a great feeling of continually settling. From her inability to wear a support the thorax had so settled that the lower ribs were in contact with the pelvis. From the irregular settling there was also a lateral tilting of the spine. From a plaster mould I modeled a cast and succeeded in holding the ribs away from the pelvis, and, by graduating the pressure as she could bear it, I succeeded in getting a *pousto* to sustain the superimposed weight. She was 1½ inches taller when the apparatus was applied, and was soon able to walk more erect than she had done for years, and with very little fatigue. The improvement was remarkable. This was the first support that she had ever been able to wear. The failure made by those who had endeavored to adjust more rigid supports is sufficent evidence that it was impossible.

A case where support short of maximum was required, but where a certain amount of freedom was desirable:

Dr. N., affected with Pott's disease of the tenth and eleventh dorsal and first lumbar vertebræ, applied to me for treatment, in October, 1895. He stated that he was unable to wear any one of a half dozen different kinds of support that had been made for him, all day. He had been compelled to give up much of a very large practice, but wished to attend to the strictly office part. The various supports he had gave him so much discomfort that he was obliged to take them off several hours during the day. Among those he had may be mentioned plaster, wood, leather and aluminium. All had been applied by specialists. I succeeded in applying a wire corset, giving him the necessary amount of support with a certain degree of freedom that enabled him to attend to the desired part of his professional duties and made life bearable and, indeed, quite comfortable. He wore the support all day with but little discomfort. The observations of this very intelligent physician were invaluable to me. Being of a marked mechanical turn of mind, and appreciating the various points of any mechanical appliance, made his experience valuable to the surgeon treating him. I questioned him again and again as to whether he felt he was getting thorough support. His answer always was that nothing he had ever worn gave him more support, and in none had he felt so comfortable. He has been under my observation ever since, and is decidedly better. It is yet inadvisable for him to go without the support.

I could cite many other cases under treatment, but do not wish to take more time. So much, then, regarding the question of support.

ELEGANCE OF THE SUPPORT AND COMFORT OF THE PATIENT.

After we are satisfied that we are using an appliance which meets the therapeutic requirements of the patient, which must always be decidedly classified first by the conscientious surgeon, the elegance of the support to be recommended and the comfort of the patient strongly appeal to us.

Here the support will show for itself. Thoroughly open, perspiration can go on freely unimpeded. The subject of retained perspiration and resulting disagreeable odor is a constant complaint I hear from those who wear the more solid appliances. This support is readily kept practically aseptically clean. Again, the movements of respiration are not unduly restricted, yet the support follows the body during expiration as well as inspiration. The surgeon sees at a glance when the support fits the body, and a certain amount of modeling and graduating is permissible which is not possible with any absolutely rigid appliance.

One word regarding the aluminium corset that has recently become somewhat more manageable in the hands of Dr. Phelps. It marks no advance over any of the dozen other rigid corsets now in use from a thereapeutic standpoint. It is quite as hard and unyielding as steel, and when once made is virtually unalterable. Were the torso like a rod of iron—the same to-day and to-morrow and next month—then we could fit it and look to our solid aluminium band to keep its position unchanged and unchangeable. But the torso is not like iron or wood, not even like the legs or arms, but changes with each respiratory movement. Right here is claimed a great superiority of the support I show you. I attribute a great share of my excellent results to having been able to support the body every moment and to graduate pressure where it was needed by modeling the support to accurately fit the patient at all points where a close fit was desirable.

The aluminium brace is lighter than most rigid supports—a distinct advantage—but it is not so manageable as some others—an offset to its lightness.

The patients who appreciate the wire corset are those who have worn rigid ones. You bore holes through your leather, your wood, your aluminium, your plaster, and you still have an imperfectly ventilated apparatus; you still have a rigid appliance the wearer is totally unable to disguise. This is indeed a sad affliction for

a woman who cares for the appearance of her figure and the comments of a curious public. The comfort and appearance of our patients is too often lost sight of.

Finally, I need not tell you that the successful use of any support, like a remedy, depends on the way it is used. One does not attempt the treatment of spinal caries very long before he sees that each case is a problem requiring adaptation of the thing at hand. I can not better emphasize this than to use the apt expression of Dr. Phelps, when he says that *plaster of Paris is effective as a brace or support only in proportion to the amount of gray cerebral matter mixed up with it.* I would add a third ingredient to the mixture, viz., an adequate experience. While true of any mechanical appliance, it is especially true of the woven wire corset, in order to get the best results. During an experience of twelve years in the use of this support, from its very incipiency through a long evolutionary stage in the hands of my friend and associate, Dr. Roberts, to its present state of approximate perfection, many patients —some most difficult to support—have come under my treatment. So far, as already stated, I have carefully refrained from publishing anything regarding results until I could speak from a thorough knowledge of the subject, based on an extended experience.

48 East Twenty-sixth Street.

IMPROVE THE SPECIES.

BY H. C. CROWELL, M.D.
KANSAS CITY, MO.

Conforming to established custom, I am expected as your president to deliver an address on this occasion. I shall disappoint, or gratify, you by departing in some essentials from the usual style and character of the address, and content myself by briefly referring to some things which might, in my opinion, profitably occupy the thought of the medical profession. I shall not attempt more than to bring the questions before you, leaving the discussions largely for others who may be so disposed.

There are many things practical to us as a profession, people and nation, that might be considered with profit to us collectively, but since it can not benefit any single individual by agitating these questions, it is safe to say they will remain but imperfectly considered.

At the recent Hereford Cattle Show, held in Kansas City, with its large number of fine cattle, excellent and perfected in every particular, over the ordinary every-day common breed, I was forcibly impressed with the degree of excellence to which these cattle had been brought, but the attainment of this degree of perfection did not so occupy my mind as the means employed to bring about such ends, and I could not refrain from making comparison with the development of a people, the intelligence, the power, the agency of greatest import in carrying out the destiny of creation. How neglected, how utterly disregarded, are all laws for higher and more perfect development, when applied to the human race.

Is it less important that the most potent factor in making history, man, should receive less thought and care in his pedigree, than the dumb beasts, his slaves? Such we are compelled to admit is the case. In the case of the animal we look carefully to his pedigree, we know to an absolute certainty what degree of purity his or her blood contains. Perfection is sought in every particular. The contour, temperament, durability, nature and peculiar class attributes are sought out in both the male and female, in order that their union may produce the most typical specimen of their kind. The care given the progeny of well-selected antecedents is directed to the end of perfecting and developing to their fullest capabilities, their inherent possibilities; no detail is neglected.

In seeking to perpetuate their kind, only the most perfect, according to a critical examination, are set apart for this purpose.

If this higher degree of development and perfection is desirable in the dumb beasts, in creatures that figure but in a material way in the perpetuating of worlds, how much more should it seem that some regard should be paid to the rules governing development and perpetuation by the human race? Why such utter disregard of all laws of development and improvement among men? We should remember that the progeny always corresponds to its progenitors; that its tendency is to degenerate rather than to improve, generation after generation, unless care is exercised to introduce improved blood on one side or the other. If the blood of one parent is tainted with some infirmity, weakness or peculiarity, it is quite apt to be visited on the progeny.

In the human family we observe none of the precautions taken by the cattle-breeder; here chaos reigns supreme. No law, no rule, no custom nor thought governs in the selection of mates in the human family. The only governing factors are passion, fancy and fortune, either of which outweighs any physical or mental consideration. The phthisical are joined to the phthisical, the neurotic to the neurotic, the vicious to the vicious, and so on through the category of inheritable features, until we have come to a nation of cripples, dyspeptics and neurotics, inferior in stature and durability, if not intellectually. Such being the case, then, to a greater or less degree, should we not learn a lesson from the grower of the lower animals, and insist that such rules and regulations be established as shall aid, at least, in stamping out inherited vices and disease, and bring about a higher order of beings; beings with better mental and physical constitutions. This is a political question which will, perforce, interest those who come after us, if it does not us; for the tendency is, by the promiscuous marrying and intermarrying, regardless, to a degeneracy of the race, which in time must affect a nation. Indeed, it may be truthfully said that to this cause, more than any other, may be attributed the fact that the descendants of Julius Cæsar have degenerated to banana-sellers, those of Demosthenes to the candy-venders of our streets and those of the mighty Moor are relegated to the deserts of Africa.

Let us have laws which shall prevent flagrant violations of all physiologic precepts, and a higher and better manhood. "Let the medical profession awaken to the fact that it owes a duty to the world more than simply modifying the results of disease. Moral vices are plunging the nations of the earth into crimes far worse in their effects, present and ultimate, than scores of the diseases for which we have no remedies."

Turning from cattle to the "horse," we see even greater evidences of improvement as the result of care in reproduction. Here we see special qualities brought to the highest degree of perfection, independent of instruction in an individual instance. It is noticeable, however, that with the higher blooded "horse," his intellectual nature is keeping pace with every other development. The stature, style, action, durability and gait have been subservient to care in pedigree until the

*Presidential address delivered before the Western Surgical and Gynecological Association, Des Moines, Iowa, Dec. 28, 1899.

most sanguine expectations of the horsemen have been realized.

In the dog, intelligence and all those attributes which constitute the desired qualities of its class are brought so nearly to a state of perfection that multitudes often express amazement at the possibilities in dog creation.

Looking now to the beauties of Nature, as seen in the flower kingdom; we are told of wondrous changes and added beauties, brought about through the agency of man, by adding up, in certain directions, individual differences, producing wondrous and striking changes in their attractive qualities, as well as modifying their aromas to the utmost pleasing degree.

Thus we see that man can bring about almost any change he may desire in domestic animals and plants, by a careful painstaking study of differences. Perfection has been the high ideal, and as a result a better product has been secured.

Is there less reason for improvement in the higher order of creation than in the lower, that causes absolute abandonment or neglect of laws which shall maintain the present standard, or give us an improved class of beings? It is well understood that continued cultivation of a certain soil or of a certain class, without infusing something that shall maintain its power of reproduction, tends to a weaker and lower order of things. This principle and knowledge is taken advantage of by man in caring for the lower order of creation, but not his own species.

This neglect, along these lines, in betterment of self, is not, as we have seen, in consequence of lack of intelligence and knowledge of what can be accomplished by "natural selection," but must be the result of neglect, or an uncertain starting-point—a sacrifice of high ideals, for mercenary or passionate fancies. I can not better express my convictions along this line of thought, perhaps, than by quoting the lines of an original thinker, one whose thoughts, although not popular with some, will yet be handed down as among the best, purest and containing more of honest conviction than those of some possessed of more popular favor, one who was born a hundred years too soon. I refer to the late Robert G. Ingersoll:

For thousands of years men and women have been trying to reform the world. They have created gods and devils, heavens and hells; they have written sacred books, performed miracles, built cathedrals and dungeons; they crowned kings and queens; they tormented and imprisoned, flayed alive and burned; they have preached and prayed; they have tried promises and threats; they have coaxed and persuaded; they have exhorted and taught, and in countless ways have endeavored to make people honest, temperate, industrious and virtuous; they have built hospitals and asylums, universities and schools, and seem to have done their best to make mankind better and happier, and yet they have not succeeded.

Why have the reformers failed? I will tell you why. Ignorance and vice are populating the world. The gutter is a nursery. People unable even to support themselves fill the tenements, the huts and hovels with children. They depend on the Lord, on luck and charity. They are not intelligent enough to think about consequences or to feel responsibility. At the same time they do not want children, because a child is a curse, a curse to them and to itself. The babe is not welcome, because it is a burden. These unwelcome children fill the jails and prisons, the asylums and hospitals, and they crowd the scaffolds. A few are rescued by chance or charity, but the great majority are failures. They become vicious, ferocious. They live by fraud and violence, and bequeath their vices to their children.

Against this inundation of vice the forces of reform are helpless, and charity itself becomes an unconscious promoter of crime.

Failure seems to be the trade-mark of Nature. Why? Nature has no design, no intelligence. Nature produces without intention, and destroys without thought.

Man has a little intelligence, and he should use it. Intelligence is the only lever capable of raising mankind.

The real question is, can we prevent the ignorant, the poor, the vicious from filling the world with their children?

Must the world forever remain the victim of ignorant passion?

Can the world be civilized to that degree, that consequences will be taken into consideration by all? Why should men and women have children that they can not take care of, children that are burdens and curses? Why? Because they have more passion than intelligence, more passion than conscience, more passion than reason.

You can not reform these people with tracts and talk. You can not reform these people with preach and creed. Passion is, and always has been, deaf. These weapons of reform are substantially useless. Criminals, tramps, beggars and failures are increasing every day. The prisons, jails, poor-houses and asylums are crowded. Religion is helpless. Law can punish, but it can neither reform criminals nor prevent crime.

The tide of vice is rising. The war that is now being waged against the forces of evil is as hopeless as the battle of the fireflies against the darkness of night.

There is but one hope. Ignorance, poverty and vice must stop populating the world. This can not be done by moral suasion. This can not be done by talk or example. This can not be done by religion, or by law, by priest or hangman. This can not be done by force, physical or moral.

To accomplish this there is but one way. Science must make woman the owner, the mistress of herself. Science, the only possible savior of mankind, must put it in the power of woman to decide for herself whether she will or will not become a mother.

This is the solution of the whole question. This frees woman. The babes that are born then will be welcome. They will be clasped by glad hands to happy breasts. They will fill homes with light and joy. Men and women who believe that slaves are purer, truer than the free, who believe that fear is a safer guide than knowledge, that only those are really good who obey the commands of others, and that ignorance is the soil in which the perfect perfumed flower of virtue grows, will, with protesting hands, hide their shocked faces.

Men and women who think that light is the enemy of virtue, that purity dwells in darkness, that it is dangerous for human beings to know themselves and the facts in Nature that affect their well-being, will be horrified at the thought of making intelligence the master of passion. But look forward to the time when men and women, by reason of their knowledge of consequences, of the morality born of intelligence, will refuse to perpetuate disease and pain, will refuse to fill the world with failures.

When that time comes, the prison walls will fall, the dungeons will be flooded with light, and the shadow of the scaffold will cease to curse the earth. Poverty and crime will be childless. The withered hands of want will be stretched for alms. They will be dust. The whole world will be intelligent, virtuous and free.

It is better to be free, to leave the forts and barricades of fear, to stand erect and face the future with a smile. It is far better to give yourself sometimes to negligence, to drift with wave and tide, with the blind forces of the world, to think and dream, to forget the chains and limitations of this breathing life, to forget purpose and object, to lounge in the picture gallery of the brain, to feel once more the clasp and kisses of the past, to bring life's morning back, to see again the forms and faces of the dead, to paint fair pictures for the coming years, to forget old gods, their promises, and threats, to feel within your vein life's joyous streams and hear the martial music, the rhythmic beating of your fearless heart. And then to rouse yourself to do all useful things, to reach with thought and deed the ideal in your brain, to give your fancies wing that they, like chemist bees, may find art's nectar in the weeds of common things; to look with trained and steady eyes for facts, to find the subtle threads that join the distant with the now, to increase knowledge, to take burdens from the weak, to develop the brain, to defend the right, to make a palace for the soul.

In these lines we observe how keenly is appreciated a degenerative tendency under existing comprehension. Intelligence must supplant passion, fancy and fortune. And how shall that be accomplished, is the great and absorbing question. Education along physical lines must be the most potent factor in effecting desired changes. This education will devolve on the medical profession largely, or at least primarily, until the principles are more perfectly comprehended in the home. The national government can and should do much in bringing about desired reforms, by sending literature, giving wholesome information into every home. Material industries are fostered and abetted by government investigation and experiment. Ignorance is often more at fault than perverseness or negligence, on matters pertaining to reproduction. Improper marriages between the weak mentally or physically, or the vicious and criminal classes, should be interdicted by law. With the marriage license should go the endorsement of competent medical authority, after being furnished with authentic family history.

With care in these directions, happiness would in no way be lessened, but insured as nearly as possible, other things being favorable. It may seem to many that such an arrangement is purely idealistic, and so it may be, bu capable of realization if sufficiently and properly agitated by the medical profession, whose members have a better opportunity of observing the needs of reform than any other class of citizens.

By care along these lines, actuated by honest conviction, shrinking not from public opinion, much can be accomplished for the welfare of people and nations. It will be truly said that already some states have moved along these lines, and in that much be it to their credit. The essential need is that such safeguards be widespread, numbering all the states and territories, making it impossible to step out of one domain into another, to commit an act which, in their own, is considered unlawful. Strength, force, morality and intelligence come only from good breeding.

A nation's durability, its dignity and position of influence, depend on her people and her institutions, all of which are the resultant force of proper regard in reproduction.

"Nature is revelation, and the light of truth shines everywhere in the world. The want of faith and refusal to reason of men, interposing, make the shadows. Man is blindfolded by himself."

This matter is not one of sentiment alone, but one of serious fact—a question which must, sooner or later, awaken a lively consideration. It is so far-reaching in its effects, with the pernicious results disseminated, that the superficial thinker might readily fail to observe its tendencies and ultimate results; like the wearing of the waters of Niagara upon the rock, slowly but certainly cutting into and destroying the original stability of society and government.

So long as such subjects as Mulligan McNulty, a four-term convict of Kansas, who slashed the throat of Deputy Warden Thomson, from simply a desire to cut some one, and without provocation, can, at some time when free, marry and probably be the father of a son, very likely to be born with perverse if not vicious passions, we can not hope to lessen our prisons and almshouses, or add to the safety of individuals or institutions.

This class of individuals, together with those of mental unsoundness, should be isolated and prevented from marrying, even though they might secure the flower of society. With a proper quarantine, vice and degeneracy could be stamped out, and in its place liberty, strength and happiness spring up, which would characterize such a condition as that of the millennium.

The restrictions and limitations which this paper would imply do not so much refer to the higher order of society, although even this class is not free from violations of such observations in mating as shall secure healthy sound offspring. The lower classes contain most of depravity, and disregard in the most flagrant manner all conscientious scruples, even carrying known communicable infirmities to the innocent. These the world over have been the most prolific in populating the world, and sowing the seeds that have occasioned the demand for prisons, almshouses and asylums. These classes have well-nigh taken the management of corporations out of the hands of the owners, and practically disfranchised the sober, thoughtful citizen. The prosperity of a country has never been found to depend on its great numbers, but on its intelligence, and its physical, mental and moral soundness.

The principle of expansion which now prevails is undoubtedly good, viewed from a commercial standpoint, but when we look beyond, we might reasonably speculate in regard to the resulting population generations hence. True, we might say that is a question so remote that we need spend no time in its consideration. But are we correct in discharging this question so peremptorily?

Let us look back a few years and observe what the feeling has been in regard to unrestricted immigration. A halt has been called, not from lack of domain, but from a lively realization of a too rapid increase of an undesirable element. And so we have every reason to expect what might be the result of an extensive aggregation of an inferior people marrying and intermarrying, without restriction or regulation.

Such has been the history of other countries, from which we should profit. Finally, not to be interminable, we are impelled to say that degeneracy is the result of fostering or permitting the perpetuation of weakness, moral, mental or physical, each generation growing weaker. *Shall we not awaken to the fact and check it?*

FAMILY DISEASES.*

BY WHARTON SINKLER, M.D.,
AND
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PHILADELPHIA.

The term "family diseases" includes a wide field in medicine as to generations and yet is perhaps more limited in number of actual cases existing than the monograph and text-book articles would lead us to believe at casual observation of these very interesting phenomena. The object of this contribution to the familial affections is to present all the cases that could be found within the direct and indirect observation of the authors. For it is only by such personal considerations that the true bearing of so difficult a problem can be elucidated in proper relation to the individual practitioner. We can perhaps best divide the subject, broadly, into the classes: 1. Hereditary maladies. 2. Family tendency to a certain disease in special generations without hereditary taint. Then subdivisions may be rightly made into the more general and hereditary, or not, affections, involving for example the cardiovascular or pulmonary systems or the nervous system with which

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we are chiefly concerned. The subject of anomalies does not concern us from the point of prophylaxis, on which we hope statistics may throw light. Of more specific beginning maladies, next may be mentioned such conditions as affections of the auditory—deaf mutes—and optic nerves—blindness. 3. We have also the special family types of nervous disease, so-called Friedreich's disease, and Huntingdon's chorea, so well known to be hereditary in nature though so rare. It is to these latter and to diseases of family type, whether hereditary or not, also of organic disease of the nervous system, especially, that the investigation portends, and from which other maladies may be better studied.

SOMATIC HEREDITY.

The subject of cardiac and pulmonary diseases is so well known to have a hereditary tendency in certain families that they are not here to be again detailed. The heredity as to tuberculosis is so flagrant, yet we feel that it needs constant reiteration; especially in its association with the neuropathic individual, if prophylaxis is to do the highest good.

By such better understanding too, of heredity of inheritance and tendency to disease, the future of the races is to be conserved. Regeneration is to be striven for even in the progeny of mild degenerates.

MUSCULAR DYSTROPHY.

The cases of progressive muscular atrophy have been reported in another place by Eshner. No case of heredity of this disease was discoverable among the cases at the Infirmary for Nervous Diseases. Out of the twenty-five cases, three were in the same family. Three died of phthisis. Roberts gives the percentage of heredity in this disease as 26.63, so that inheritance through other organic disease or predisposition plays perhaps as important a rôle in the vicious circle.

EYE AFFECTIONS.

The interesting series of cases to be published in the monograph by Dr. C. A. Oliver, on a form of hereditary optic atrophy, has been traced through six generations, dating back into 1700. The family "tree" here shows that the atrophy began in the female, but that in the progeny the affection has always passed to the male child through an unaffected female. Out of 153 persons, 22 of them are affected with this atrophic degeneration. The trouble begins about at adolescence as a rule; some cases have begun so late as at 35 to 40 years. One of the writers has had the privilege of observing and testing the gradually diminishing fields of vision in the half dozen of these cases. In "A Study of the Blind[1]," one of us has noted hereditary optic atrophy in several families of children. Hereditary choroiditis is another condition shown in the table, so that the field of heredity grows larger in ophthalmology as we investigate.

DEAFNESS.

One of the writers had under his care a deaf man, aged 40, one of nine children, and whose parents were normal. Five of this family were born deaf—atavism—but are bright in all other ways. The subject of hereditary deafness has been thoroughly discussed in a recent work[2]. These studies were made by the Volta Bureau with the aid of the U. S. Census Bureau. In regard to the same subject, Dr. A. L. E. Crowter, superintendent of the Pennsylvania Institution for the Deaf and Dumb, under date of June 1, writes as follows: "Replying to your inquiries relative to the number of pupils in this institution, born of deaf parents, also the number of pupils born deaf, I beg leave to say that out of 505 pupils now in attendance, I find fifteen were born of deaf parents, and that 150 (15 of deaf parents and 135 of hearing parents), almost 30 per cent., were born deaf." The atavistic tendency of deaf persons to be born of the hearing, and vice versa, again proves the exception to the rule. The only safe criterion for prevention of possible hereditary deafness would be the voluntary non-marriage of families where deafness is in the history. The same would hold good in other traceable diseases.

NERVOUS DISEASE HEREDITY—FROM THE INFIRMARY FOR NERVOUS DISEASE.

The cases here recorded are those where, in the histories, it is explicitly stated that heredity exists or that a number of cases of a certain disease coexist in one family. The immense number of tics and cases of migraine are, from meager data, excluded.

The literature of family types and of hereditary diseases is enormous. The writers make no special investigation therefore as to bibliographical data, but present, in the following study, a record of cases indirectly or directly observed, largely in neurologic lines, in the hope that such data will throw more light on this intricate problem. In going over 16,500 cases occurring at the clinics at the Orthopedic Hospital and Infirmary for Nervous Diseases, and in the wards and in private practice, the writers have endeavored to make a classification of those cases in which there seems to be a grouping of a number of disorders in one family, hence the title given this paper. That there can be no accurate classification of a number of individual cases, as far as we are able to study the history, is evident. This limitation of knowledge does not necessarily, however, disprove a latent heredity as being existent, e. g., in a large number of tics and cases of migraine. That the large majority of all diseases are not secondary to previous hereditary taint is upheld. But that the hereditary factor, while admitted, is not so clearly elucidated as might be is the contention made, and it is with the hope of determining this element in medicine that the study of the broad subject of hereditary disease is here undertaken through analysis of a fairly large number of cases. With a better understanding of transition or equivalent diseases throughout a particular class of individuals or families, will prophylaxis, pathogenesis, prognosis, treatment and pathology all be extended to the greatest good to humanity.

CORD DISEASES.

1. Primary lateral sclerosis is a very rare affection of the spinal cord and we have been unable among the cases analyzed to determine any case existent in successive generations. The essential nature of the case of M. McB., a female, beginning at her 19th year, shows a tendency to heredity in the fact of early age in this developmental type of system disease coming on without any known exciting cause whatever. Perhaps this is but an evidence of waning power in a generation with an undeterminable unstable nerve protoplasm. The frank syndrome of symptoms existing in spastic paraplegia from cerebral or in later adult lateral sclerosis does not exist in the primary affection mentioned. The muscles seem more flaccid, sensation less disturbed, extremities cold and clammy, and while the coarser movements of the extremities are very inco-ordinate, as with the fingers, yet the patient is still able to do fine work, such as sewing, with comparative ease. The prognosis as to prolongation of life, too, is singularly more favorable than in secondary sclerosis where also an incipient

tuberculosis is more apt to complicate, even if the sclerosis may happily become little or non-advancing—helpful knowledge for the physician.

Insular sclerosis of more distinct family type is shown in G's family, in which the father was a drunkard and most likely the subject of specific disease, who had violent maniacal outbursts and at middle life developed apoplexy, hemiplegia, epileptoid seizures, and progressive paretic dementia. The mother was a fairly robust woman until 65 years old, when she died of carcinoma uteri. Of twelve children, two died in early infancy. One daughter, at 4 years of age began to become spastic, and to develop nystagmus with bulbar symptoms. This has progressively increased with notable remissions, until the present time, her 31st year.* A younger brother, aged 25, has been afflicted with lateral and mixed sclerosis mostly affecting the lower extremities since 15 years of age. There are no eye symptoms in him; the knee-jerks are plus, and ankle-clonus is present; there is some head inco-ordination. The tendency to sclerosis in another boy developed at 7 years of age, along with feverish condition, and he remained so for several years. At 13 years of age, in 1896, it had entirely disappeared, he being quite well. This latter case seems to illustrate a possibility in restoration of functions and structure through better nutrition. The hereditary taint of faulty protoplasm came in major part through the paternal ancestry. This particular family has been under the observation of Dr. S. Weir Mitchell for a number of years.

The hereditary factor in idiocy and cerebrospastic paralysis does not bear so close a family-type relation as one might suppose, yet an instance of two imbeciles and an epileptic child has recently come under observation of one of the writers, the father being one of the lower class of alcoholics, the mother of feeble physique. The two imbecile children resemble the father in appearance, and the epileptic child much resembles the mother in this—both being of very refined natures and the girl particularly bright though subject to frequent attacks of petit mal.

Another clinic case of myxedema—cretinism—which has been reported by one of the writers, also demonstrates unstable nerve protoplasm through a brother who, after recently being subject to measles, developed peculiar stammering sequent to the infectious process, again showing weakened trophic state of his neurons.

One of the authors has endeavored to classify the hereditary element in 532[3] cases of mental impairment, but the histories were often so falsely stated that it was impossible to get the accurate information other than the generalities suggested here.

We give below tables of the actual number of family diseases recorded, as indicated in the 16,500 histories studied.

TABLE 1.—CORD DISEASE.

Hereditary spastic palsy: 12 children; one female developed the disease at 4, one male at 7 years.

G. family: father dissipated and hemiplegic; no further heredity.

M. McB.: no ancestral cord affection, but no doubt "developmental."

McC. family: 7 children, 3 affected with insidious palsy in one or other leg. Doubtful lead poisoning or infantile palsy.

A. J.:[4] aged 19 years, reported by Dr. J. K. Mitchell,[5] a case of periodic paralysis in three generations: maternal grandfather and his first cousin, mother and her two brothers —one brother, one attack only—then a first cousin, daughter of a brother, making seven cases in all.

Mrs. B.: reported by Dr. Wharton Sinkler;[6] asthenic bulbar paralysis; family type in that nystagmus exists in patient and two brothers; one son, aged 15, also nystagmic; babe 14 months old, also; father died of apoplexy; maternal grandmother blind for years.

Dr. C. A. Oliver's cases: some examined by one of the writers; six generations of hereditary primary optic atrophy in male element of family.

Private case of Mr. R.: aged 60 years; high myope, congenital choroiditis wherein lenses since eight years; two uncles and an aunt similarly affected.

Private case: at 5 had chorea; before marriage had sunstroke; died in later life of meningitis.

Huntingdon's chorea: case reported by Dr. J. K. Mitchell.

See also—tree—cases of Dr. A. J. Ostheimer of Kathcart Home, Devon, Pa.

TREE DENOTING TRANSMISSION OF HUNTINGDON'S CHOREA AS PER TABLE.

A. Father: Died at 73 years with chorea, chorea beginning at 58 years.

B.
- Daughter, died at 70 years, with chorea and dementia.
- Son, now 68 years, has no chorea.
- Mrs. Tine, *patient*, died at 82 years with chorea beginning at 62 years.
- Son, now 72 years, has chorea as patient had.
- Daughter, 75 years, has slight chorea.

C.
- Son, now 57 years, has had choreic movements for 12 years.
- Son, aged 47 years, no chorea.
- Daughter, aged 60 years, no chorea.

D.
- Daughter, aged 31 years, no chorea.

One of the writers has also reported on hereditary chorea,[7] finding several instances where the disease existed in successive generations; not more than three being ascertained.

An example of singularities in the history of medicine is also shown here in relation to Huntingdon's disease, for while it was defined by Dunglison in 1841, and was described by J. W. Lyon in 1863, as chronic hereditary chorea, it was not distinctly recognized until Huntingdon wrote of it in 1872.

TABLE 2.—CASES OF FAMILY TYPE OF DISEASE, NOT DIRECTLY HEREDITARY AND NOT CONGENITAL.

S. T. C.: aged 35, male, single; infantile paralysis in right leg; a brother suffers from the same trouble.

C. S.: habit chorea; three children in family.

McD. family: seven children in family and three affected with muscular dystrophy.

Epilepsy: one case of idiopathic in a family and five of Sydenham's chorea in brothers and sisters.

Tending toward the ideal in the study of heredity and disease would be the determination of cases of family types of disease congenital and without direct hereditary history. Many cases of imbecility and cerebrospinal palsy must come under this category; those histories are most difficult to determine.

INFECTIOUS DISEASES WHERE IMMUNITY OR SUSCEPTIBILITY SEEMS TO BE GRANTED THOSE IN PROGENY RESEMBLING MOST THE PARENT THAT IS SUSCEPTIBLE OR NOT TO THE DISEASE, OR THROUGH VACCINATION-INDUCED IMMUNITY.

In this category we are able to give the unique example recently quoted by Dr. Gump before the Medical Society of Pennsylvania, of several children in a family resembling the parent and not vaccinated against smallpox, taking the disease, while those resembling the vaccinated parent did not develop the disease. This we consider a very important observation as to heredity in disease, and its leaning on heredity of characteristics as pointed out by Lombroso and referred to above.

*This woman has recently developed carcinoma of uterus also, as by examination to-day, showing heredity of Cohnheim.—Jan. 13, 1900.

TABLE 3.—CASES OF FAMILY TYPE OF DISEASE IN WHICH THERE IS DISTINCT HEREDITARY TRACING AND BEGINNING. EARLY IN LIFE.

Of twenty cases of pseudohypertrophic paralysis of childhood recorded, none were traceable to previous dystrophy in ancestry. See Poor's table on heredity.[8]

S.: family; progressive pernicious anemia existing in two daughters aged 16 and 20, beginning in father, however, at 30th year; death at 45 years; no autopsy; symptoms of posterior sclerosis during life.[9] In this man the blood count averaged 2,700,000 and hemoglobin 27 per cent. There was no Argyll-Robertson pupil.

K.: family, locomotor ataxia; no injury nor specific disease in the patient seen, a male of 42 years; father died insane (melancholia); one brother had same trouble and shot himself.

M. H.,: aged 18; constant choreiform motion of right arm, ceased one day suddenly after four months' continuance; mother formerly had epilepsy, especially with movements of arm, probably simulation.

Woman: aged 45; father and husband insane; she is melancholic—true and false.

M. M.: male, aged 60, tic douloureux began at 16; a niece of 30 also a sufferer since her 15th year. We saw these two cases. It is most difficult to obtain accurate histories.

TABLE 4.—CASES OF FAMILY TYPE OF DISEASE IN WHICH THERE IS NO DISTINCT HEREDITARY TRACING AND BEGINNING LATE IN LIFE.

M. A.: aged 50; male; single; hemiplegic; father and mother died of apoplexy; of eight maternal uncles two died of paralysis—apoplexy (?).

Three cases of rheumatoid arthritis in one family—one male and two females—beginning after 35 years of age and producing extreme deformities.

Case of muscular dystrophy beginning in late youth and in several of family—a case of elephantiasis—idiopathic (?)—in one adult.

TABLE 5.—CASES OF FAMILY TYPE OF DISEASE OF ATAVISTIC TYPE, I. E., WHERE THE FAMILY DISEASE IS A DISTINCT ENTITY FROM THE FAMILY DISEASE EXISTING IN THE ANCESTRY—SUBSTITUTION DISEASES.

Litter of cats at Lewes, Del.: some in litter are deaf, with dark irides, other pink eyes—albinos—amblyopia; hearing good.

Cases in practice of Dr. C. A. Harnish, Huntingdon, Pa.: three of parenchymatous nephritis, children of same family; no etiology traceable; no heredity known.

A. B.: family; parents no relation; ten children—five deaf and dumb, five normal; father and mother are Russian Jews; father hunch-backed from Pott's disease, as the only ancestral disease known at Pennsylvania Institution for Deaf and Dumb.

C. D.: family; parents healthy and no consanguinity; seven children—three females—died of diphtheria when each arrived at 2 years of age; three boys and a girl, healthy.

Case of boy who at 2d year had convulsions followed by convulsive tic at 7th year, and by chorea at 12th year, following an attack of scarlatina; heart complication; death from endocarditis; one brother had several attacks of chorea.

Case of Friedreich's disease in B. R., female; 18; seen with Dr. John M. Swan: has developed tuberculosis; a brother died of phthisis; an instance of exception to the rule in our experience of congenital nervous disease, being less liable to secondary tuberculosis, and probably due to the tubercular diathesis being existent in the family at the same time. Case reported, College of Physicians, Jan. 8, 1900.

TABLE 6.—CASES WITH OR WITHOUT KNOWN HEREDITARY TAINT WHERE ONE SET OF CHILDREN DEVELOP ONE TYPE OF DISEASE, ANOTHER SET DEVELOP ANOTHER TYPE OF DISEASE.

Progressive muscular atrophy; male; age 25; three brothers died of phthisis.

Private case: V.; family; of eight children, seven died of scarlet fever—three in one epidemic; others died in separate, at different good hygienic localities; one son now under treatment in rapid phthisis, aged 30 years; no tubercular ancestry known.

Those peculiar types of family disease without known cause, in which male or female alone seem to be affected, we have given several examples of in nervous disease. No doubt there are many more instances of the same not recorded for want of accurate history taking; and that many cases of hemophilia and tendency to bleeding in families escape our attention.

Neurasthenia is in many instances the progeny of a hereditary predisposition, plus the exciting cause; but our tabulation could not be accurately made as to this broad field among the histories submitted to examination. Likewise with the migraines, which demand understudy before we can lay down safe prophylaxis or cure in these prevalent affections of Americans.

TABLE 7.—MISCELLANEOUS CASES AND SUBSTITUTION DISEASES. MANY CASES OF SPECIFIC DISEASE CURED BUT LEAVING A NEURASTHENIC TENDENCY IN PROGENY. NOT GIVEN PLACE.

Exophthalmic goiter: Bessie K., aged 24; aunt had same in childhood; cured; patient improved under galvanism.

T.: family; father hypochondriac; color-blind for red and green; same in a daughter; the phenomena not constantly complete.

Idiopathic muscular atrophy: two brothers aged 15 and 20.

Private case:[10] A. B., aged 20; intracanalicular fibroma of mammary gland; patient's mother suffered from the same trouble; both cured by operation.

Private case:[11] Hebrew, multipara, aged 51; tumors—fibroadenoma of both breasts; operation; cure. Mother had tumors of both breasts.

Private case: J. P., aged 30; mother a neurasthenic for years; patient acquired neurasthenia at 25, after full business life.

Private case: Mrs. F., aged 55; slight apoplexy five years ago; always nervous; worse since sunstroke—emotional; son, aged 29, through environment, generally nervous for years.

M. L.: aged 51; female; exophthalmic goiter; cured; daughter, aged 15, several attacks of chorea.

R. S.: aged 51; myxedemoid; one child mentally feeble, subject to night terrors, and one child choreic.

Case 15326: intercostal neuralgia, persistent one generation; angina in several of succeeding generations.

J. H.: aged 42: passed six months tubercular pleurisy; younger brother died of diabetes mellitus.

A. C.: aged 54; chronic rheumatism; daughter suffers from hay-fever; patient when young, subject to tonsillitis—transition.[12]

Case of Mrs. M.: aged 35; neurasthenic syncope; becoming epileptic at 40 years.

Mrs. McB.: aged 45; epilepsy; infrequent attacks of grand mal; aura begins several hours before attack, by twitching of left great toe; woman congenital as to dwarfism.

H. cases: diabetes in a male of 35, whose father and two brothers also suffered from diabetes mellitus.

Case of R. L.: aged 18; male; anteparenchymatous nephritis; an aunt and several uncles died of Bright's disease.

K. and brother: aged 54 and 56; uric acid diathesis and albuminuria of uric acid angina causing death of one.

We have thus found over fifty distinct instances—i. e., family genealogies—of family types of disease, including over 200 cases, or about one-eightieth of the whole number of cases examined.

A continuation of the study in regard to circulatory[13] disturbances leads us to think that cardiac and vascular disease will bear close hereditary relation to the ancestors' cardiac-vascular abnormalities; especially when resident in the parents. Further study as to this is being carried out, and tabulated data will be presented later.

By reference to tables herewith compiled, a more detailed notice of those cases we have observed is set down. The tendency of certain diseases to run in groups in different families or of a single disease selecting a certain generation, or again where one disease

found to exist in but one person in each succeeding generation—all these bring into play vital phenomena which are nearly insurmountable for positive interpretation. But we can not point exactly to the close relation which often must obtain between blood relations, yet a number of examples of hereditary tendencies are brought out by meteorologic, climatologic, and bacteriologic exciting causes. We can at least stand on surer ground as to modifications of family disease in making statements about expectation of life in certain classes of them, where the vague predispositions can be better elucidated. This study teaches in a negative way the importance of the so-called individual element being given high place in sociologic considerations in health and disease. C. Lombroso has recently laid stress on "heredity of acquired characteristics," showing clearly such effects in health.

Then it will be in the line of truer consideration toward clearer elucidation of the subject of immunity, and poisons from within—toxins or metabolites—and from without—toxins, bacteria and other poisons—will be better understood as to their very full meaning to hygiene and disease. No surer thing is in medicine, which every physician of large experience will testify to, than that the vital element, almost beyond the limitations of human investigation for intricate details, adds a ponderous weight to the scales of living. If it can have been pointed out more forcibly in this paper to the advancing mind, that medical science can not go beyond a reasonable association with vital action, the endeavor will serve its intent. It is fitting, too, to bring the subject for discussion before one of the higher arts in medicine—neurology.

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10. Proceedings of Path. Soc. of Phil., May 12, 1898.
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12. See "Remote Results in Artisan's Palsy": University Med. Mag. July, 1899, for other cases.
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DISCUSSION.

DR. F. W. LANGDON, Cincinnati, Ohio—I must confess that some of the conclusions appear to do violence to our preconceived notions. I noticed particularly the extremely small number of cases, only fifty in a total of 16,500, in which a disease could be traced as hereditary. It is quite possible that this small proportion of "hereditary disease" may be due chiefly to our refinements in nosology—rather than to any real lack of hereditary influence. In other words, it is a question of *name* not of *fact*. I am impressed with the great value of the paper, and the large amount of labor required to prepare it.

DR. F. SAVARY PEARCE, Philadelphia—It struck me just exactly as it struck Dr. Langdon, that in all this collection we were able to find so few cases in which a disease was handed down from one generation to another. The object of the research was to find out what number of instances in a large series of cases were really truly hereditary. A possible fallacy would be that the histories were not taken accurately, but at the Orthopedic Hospital and Infirmary for Nervous Diseases the case records are taken with considerable care and in great detail, and I believe they are nearly accurate in most respects. I hope the paper, when it is illustrated by details presented in the tables not read, may show something more valuable. It would seem from this investigation that in at least 1 to 75 or 1 to 80 cases of nervous disease heredity as to the same disease may be discoverable if properly searched for; while the proportion is vastly greater as to transmission of nervous predisposition to any form of neural malady in a lineage tinged with marked neuropathic diatheses. It should be stated here that hemicrania was not particularly dwelt on in tracing histories at the Infirmary for Nervous Diseases, except where it actually existed in the patient reporting for treatment; and this subject might be well worth careful statistical inquiry.

UNCOMMON PYOGENIC INFECTION OF THE MIDDLE EAR.*

BY ROBERT SATTLER, M.D.
CINCINNATI, OHIO.

It has long been recognized that cauterization of posterior and middle nasal hypertrophies, even if practiced with every caution in the selection of cases, method, and accompanied by every required antiseptic precaution, is not unattended by dangers. This warning is often not heeded until personal observation and experience have afforded convincing proof of its truth. Formerly, when the use of the galvano-cautery and other escharotic methods to effect the shrinkage of the hypertrophied areas of the mucous covering of the inferior turbinates was more general and their application more reckless, it not infrequently came to pass that acute pyogenic infection of the middle ear, of the ethmoidal cells, and even septic infection resulted as a complication in cases even where the operation was clearly indicated and necessary.

The destruction of posterior hypertrophy in particular is fraught with risk and danger. Fierce resentment on the part of the cauterized region, altogether out of proportion to the slight local injury inflicted, terminates in sphacelation and is followed or attended by destructive complication of the adjacent cavities and sinuses.

More recently, with careful selection of cases and greater circumspection in the choice of methods, with the use especially of the cold snare for the posterior thickening and the rigid avoidance of the thermo- and galvano-cautery, the frequency of occurrence of these often grave secondary complications has been markedly lessened.

It is true that in many cases the process which is excited as a result of the cauterization causes an acute purulent otitis media only, with perforation of the drum, but stops short of further destructive inflammation elsewhere. In a few cases, however, the pyogenic products which are present in the nose, wander or are forced into the middle ear along the Eustachian canal, and then is precipitated, with almost incredible rapidity and severity, a violent infection of the middle ear, antrum cells, and often even of the meninges and cerebellum.

The following case will illustrate: The patient was a young woman of frail physique, but in the best of health and with no history, antecedent or at the time, of any ear trouble. She had for several years been annoyed from time to time, by nasal stenosis, in consequence of hypertrophic rhinitis. There was present, both middle and posterior hypertrophy, more marked on the right side. At the suggestion of a specialist of distinction and experience, the latter removed the posterior thickening of the right side of the nose. Violent reaction with general septic infection followed this attempt, and after a few days it was evident that complications of the right ear had been added. Together we made every effort to arrest the progress, only to have

*Presented to the Section on Laryngology and Otology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

our fears realized, that an unusually severe otitis media had given way to acute empyema of the antrum and cells. On the twelfth day after the nasal operation, surgery, to meet every indication which might be disclosed, was practiced. Pus was found under the periosteum, the cortex was very vascular and succulent and even the outermost cells full of pus. When the antrum was reached a gush of pus occurred. Improvement in breathing and pulse was at once observed. The proportionately large amount of pus found here suggested to us at once, what was also discovered afterward through exposure of the tympanic attic, viz., perforation of the tegmen and a large extradural abscess.

Fearing that complete escape of pus and drainage could not be secured, the middle fossa, in a locality most favorable to meet the desired indication, was opened, and it was fortunate that this was done, for it enabled us to evacuate a large accumulation of pus, which along the first channel, would well-nigh have been impossible. The most complete drainage was thereby secured, and in spite of the general septic infection, the patient recovered.

A PRELIMINARY INVESTIGATION OF THE THEORY OF THE INOCULATION OF MALARIAL FEVER THROUGH THE AGENCY OF MOSQUITOES.

BY ALBERT WOLDERT, M.D.
PHILADELPHIA.

(Concluded from Page 269.)

For some time past I have been studying the different species of mosquitoes collected in eastern and central Texas, eastern Pennsylvania, and the eastern coast of New Jersey. I learned that during the month of October the *Culex pungens* was the most common species which prevailed to the greatest extent in all of them. I have made sections of many of them and examined these microscopically. Probably 2000 sections have been made. The subject of entomology is a very important one in connection with this work, and in this department of science there is much room for improvement, such as the classification of mosquitoes.

NATURAL ORDER OF THE MOSQUITO.

The mosquito belongs to the natural order *Diptera,* sub-order *Nemocera,* and to the family *Culicidæ.* Two genera are most commonly known, namely, *Culex* and *Anopheles.* The word "mosquito" is derived from the Spanish and Portuguese *mosca* or the Latin *musca,* which means a gnat or fly. The name probably originated in the West Indies, where it is learned that the term "culex, mosquito" was first applied to a kind of gnat streaked with silvery white, the female members of which have a piercing and sucking proboscis and annoy man.

Mosquitoes are distinguished from *Chironomus,* which they resemble very much, from the fact that the former are provided with an elongated proboscis or biting apparatus, while in the *Chironomus* the proboscis is but poorly developed. The wing of the mosquito is covered with hair-like scales that often extend beyond the posterior margin. The *Chironomus* is often seen in swarms or clouds, which give rise to the impression that there is a deluge of mosquitoes in a certain locality. Some members of the family *Simuliidæ* are also called mosquitoes. All told, about 150 species of mosquitoes have been described. The natural food of this insect is probably the juice of plants, the sucking of blood being an *acquired taste.* They only forage for food within a short range of their natural habitat. How long the adult insect can live under the most favorable circumstances is not known. One writer says that the impregnated female may survive the winter, feeding in sheltered spots, such as barns, cellars and outhouses.

It is stated by authors on this subject that the eggs of the mosquito are deposited by the female in a delicate boat-shaped mass on the surface of the water. These are packed side by side with the smaller end uppermost, forming a concave mass that floats readily. They hatch within a few days, and within a period of from three to four weeks develop into the full-grown insect. Several broods are hatched each season, about 300 eggs being deposited. Frequently—but not always—the female dies after depositing the eggs. When the egg cell ruptures, the larval stage begins, and in the case of the *Culex pungens* or common mosquito the body of the larva becomes partly submerged and floats with head downward, but breathes through the pneumatic tube at the extremity of the tail. To these bodies the term "wigglers" or "wrigglers" is applied. The eggs of the *Culex pungens* may be deposited in buckets or pails around the house, and in stagnant water. This variety may be termed a "house mosquito." Not all mosquito larvæ are deposited in stagnant water, for the soil may also harbor them. It is said that this insect is found in the Rocky Mountains, where stagnant water is unknown. The male probably never bites man, owing to the non-development of the mouth parts. He may be readily distinguished from the female from the fact that the former is provided with antennæ which are broadly feathered—bearded—or plumose, while in the latter the antennæ are slender and only have a few lateral bristles. (see Fig. 1.) It has been stated that the male "rarely enters our dwellings and lives unnoticed in the woods," but I must dissent from this view.

GENUS ANOPHELES DISTINGUISHED FROM GENUS CULEX.

According to Ross, the larvæ of *Anopheles,* unlike those of *Culex,* do not swim with head downward, but lie flat on the surface, like sticks, due to absence of a breathing tube. The larvæ of *Anopheles* are not found in buckets of stagnant water around the house, in wells, cisterns, and drains, or in artificial collections of water, but are only found in *natural* ponds or puddles, such as persist after heavy rains. They have been found in puddles between rocks, in rice-fields and between the rows of growing grain. Fish devour the larvæ with avidity, hence they are seldom found in lakes or ponds where fish are present. The *Anopheles* is a distinctly rural mosquito. In searching for the adults, Ross usually found them around stables and cattle byres. The adult *Anopheles* may be distinguished from the *Culex* in that the former has spotted wings, the palpi are as long as the proboscis, and when the insect rests against the wall the body projects outward, while in the *Culex* the body hangs downward. In the *Anopheles* that I have seen, the legs are quite long and very much finer than in the *Culex,* and are not striped. It has been said that certain species of *Culex* have spotted wings. I can not speak for all species of the latter, but the following named species do not have spotted wings as the term implies in the case of the genus *Anopheles: Culex triseriatus, Culex impiger, Culex pungens, Culex stimulans, Culex posticus, Culex teniorhynchus, Culex fasciatus, Culex perturbans.* The following species of *Culex* have whitish transverse bands across the legs: *Culex teniorhynchus, Culex stimulans, Culex fasciatus and Culex excitans.*

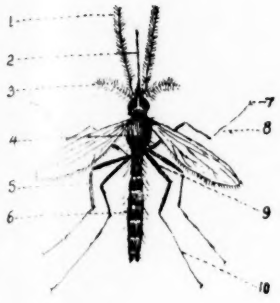

PLATE 1-MALE CULEX PUNGENS

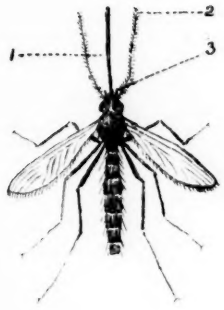

PLATE 2-FEMALE CULEX PUNGENS
DORSAL VIEW

PLATE 3-FEMALE CULEX PUNGENS
SIDE VIEW

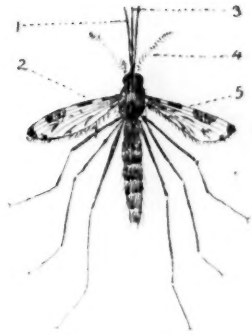

PLATE 4-FEMALE ANOPHELES QUADRIMACULATUS

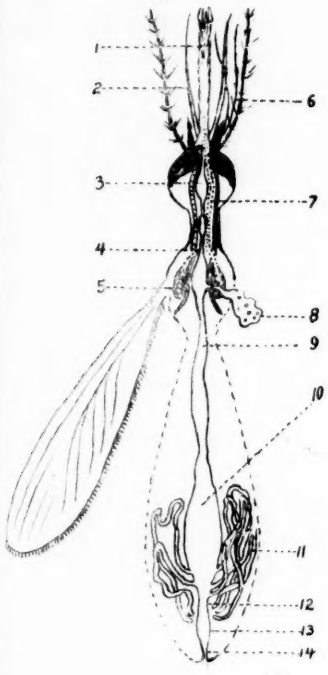

PLATE 5-DISSECTED MOSQUITO

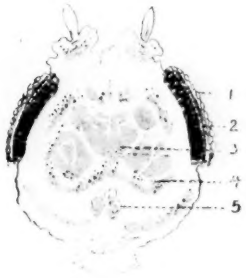

PLATE 6-CEPHALIC GANGLIA
(BRAIN OF MOSQUITO)

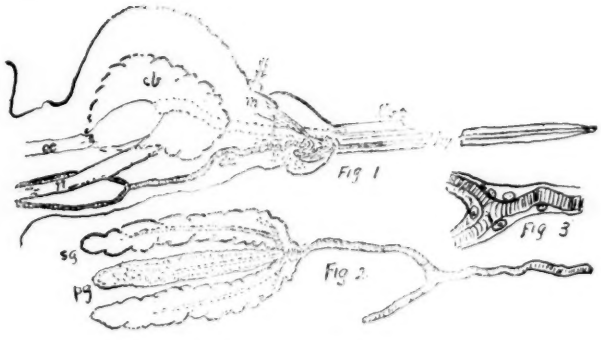

PLATE 7 VENOMO-SALIVORY GLAND OF MOSQUITO (MACLOSKIE)

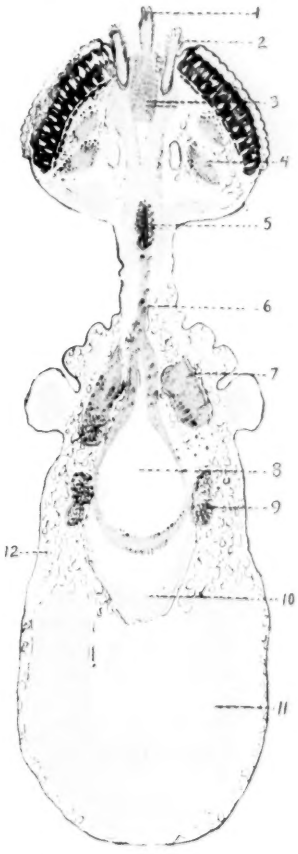

PLATE 8 LONGITUDINAL SECTION THROUGH DORSAL SURFACE OF MOSQUITO (CULEX PUNGENS)

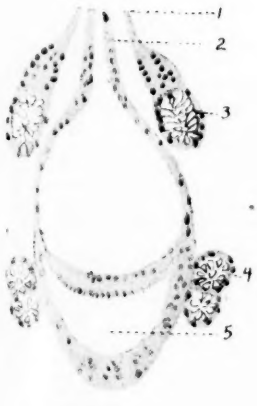

PLATE 9-PART OF PLATE 8
GREATLY MAGNIFIED

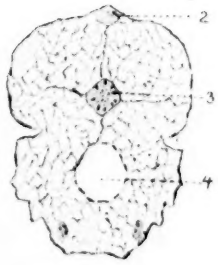

PLATE 10-TRANSVERSE SECTION THROUGH UPPER PORTION OF ABDOMEN OF MOSQUITO

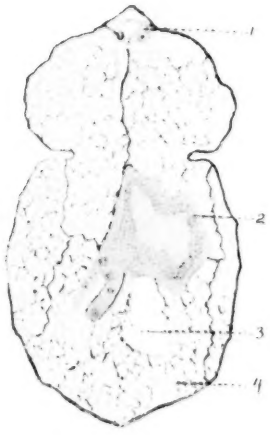

PLATE 11-TRANSVERSE SECTION THROUGH LOWER PORTION OF ABDOMEN AND STOMACH OF MOSQUITO

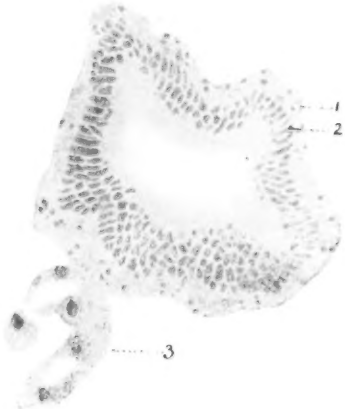

PLATE 12 TRANSVERSE SECTION THROUGH STOMACH OF MOSQUITO SAME AS PLATE 11
GREATLY MAGNIFIED

TABLE OF GENERA OF CULICIDAE (WILLISTON).

1. Proboscis short, not longer than the head; metatarsi longer than the following joint: genus, *Corethra.*
Proboscis much elongated, longer than the head and thorax together: See No. 2 of this classification.

2. Proboscis strongly curved, palpi of the male very long, of the female very short: genus *Megarhinus.*
Proboscis straight: See No. 3 of this classification.

3. Palpi in both sexes, of equal length: See No. 4 of this classification.
Palpi in the male long, short in the female: genus *Culex.*

4. Palpi longer than the antennæ: genus *Anopheles.*
Palpi shorter than the antennæ: genus *Aedes.*

CHARACTERISTICS OF THE COMMON SPECIES OF MOSQUITOES.*

The most common species of mosquito found in the United States is the *Culex pungens.* It was the one found prevailing during October in the different sections of Texas, Pennsylvania and New Jersey, previously named. In my collection only one *Anopheles* has been caught. It was sent from central Texas—near the Brazos River—where a severe form of malarial fever was then prevailing. It belonged to the species *punctipennis* and was devoid of blood. Sections were made of it.

The following description may be made in regard to the *Culex pungens* or common—domestic—mosquito: This is of medium size, rather dark-brown body, with yellowish pubescens or fine hairs on the thorax; the legs are dark reddish, quite long; the proboscis slightly curved; and the abdomen very dark-brownish, with margins of segments whitish. The dorsal surface of the abdomen contains several circular, light or yellowish bands. The palpi in both male and female are rudimentary. (See Plates Nos. 1-3.)

Another common species of *Culex* is the *Culex tri-riatus.* It is found mostly along the coast country, and is especially severe in New Jersey. It is of medium size; the body brownish in color, and on each side of the abdomen or tergum are seen several whitish triangular spots at the base of each segment; on each side of the thorax—pleura—two spots of whitish hairs are seen; the legs are very black in color.

Culex fasciatus is another common species. On macroscopic appearance it might be termed a "black mosquito." The legs are striped transversely, with whitish bands. It is of medium size, about the same as the *pipiens* of Europe. Across the proboscis three whitish bands are seen. The thorax is very black and contains a row of white spots along the dorsal line. It is found mostly in the tropics and along the coast country. Besides the above-named species, the following are also common: *Culex Consobrinus, Culex impiger, Culex stimulans* and *Culex teniorhynchus.* The *Psorophora ciliata* and *Megarhina rutila* are perhaps the largest mosquitoes.

GENERAL CHARACTERISTICS OF ANOPHELES.

I can only speak of *Anopheles quadrimaculatus* and *Anopheles punctipennis.* The three most distinguishing characteristics of these two species are: Presence of dark or brownish spots on the wings, due to a thicker growth of fine hairs in these regions; palpi as long as the proboscis; legs very long, delicate and of a solid dark-brown color. The body in both species is of a light brown color. According to Loew (1863) the *Anopheles claviger*—or *maculipennis*—occurs in North America. It must be rare. Mr. C. W. Johnson, curator of the Wagner Free Institute of Science, Philadelphia, has not been able to collect a single specimen. There is no specimen of this species at the Academy of Natural Sciences of Philadelphia, American Museum of Natural History of New York, and none obtained in North America in the collection of the National Museum at Washington. I have looked up the original reference of Loew[3]. In an address before the Society of Koenigsburg Naturalists, delivered in 1861, he said: "The comparison of the North American diptera with the European ones was rendered possible to me on a very extended scale through the study of the conclusions of Baron Osten Sacken. The comparison showed a surprisingly large number of species common to both continents. As such species common to both countries, I can name with certainty and from personal investigation the following: *Anopheles claviger* (Meigen); *Anopheles quadrimaculatus* (Say), or, according to Loew, termed *Anopheles pictus; Anopheles nigripes* (Staeg, etc.)."

The most common species of *Anopheles* found in North America are: *Anopheles quadrimaculatus* and *Anopheles punctipennis.* The *Anopheles quadrimaculatus* has been found in eight different localities of the United States, as follows: Texas, Florida, Maryland, District of Columbia, Illinois, Minnesota, New Hampshire and New York. The *Anopheles punctipennis* has been found in nine different sections of the United States, to-wit: Texas, District of Columbia, Maryland, Vermont, Massachusetts, Pennsylvania, New York, New Mexico and Illinois. Besides the above, the *Anopheles crucidus* and *Anopheles ferruginosus* have also been found in this country.

THE ANOPHELES QUADRIMACULATUS.

Plate 4 may be thus described: Body about the size or perhaps a little more slender than *Culex pungens;* body and wings dark brownish in color; four maculated brownish or dark spots on each wing, due to a thicker growth of short bristles or hairs in these areas. Three of these spots are found extending along one of the veins near the costal vein, while one is somewhat posterior to the last two spots (see Plate 4); legs very long and slender and of a solid dark-brown color somewhat lighter at the tip of the femora and tibia.

The *Anopheles punctipennis* is about the same size as the *quadrimaculatus,* but of a somewhat lighter brownish color than that of the latter. This species also has several dark or brownish spots on each wing, but these are differently distributed from those seen in the *quadrimaculatus.* In the *A. punctipennis* two of the spots are distributed along the costal vein, while there are several smaller spots irregularly placed posterior to these two larger ones; the legs are about the same length, size and color as in the latter species.

Mr. C. W. Johnson informs me that while on a collecting trip along the St. Johns River, Florida, he was severely bitten one night by the *Anopheles quadrimaculatus.* On his return to Philadelphia, two weeks later, malarial fever developed.

The *Anopheles claviger,* from the imperfect descriptions that have been given, seems to present the same general characteristics of the *quadrimaculatus* and *punctipennis,* but the dark or brownish spots on the wings are said to be four in number and distributed along the anterior nervure.

PERSONAL COLLECTION OF MOSQUITOES.

The following data regarding my collection of mos-

*Plates Nos. 2 and 3.

3. Silliman's Journal of Science, vol. xxxvii, No. 37, p. 317, new series.

quitoes may be detailed: All that were caught in sleeping apartments, outhouses and cellars in Philadelphia during the last two weeks of September and October were the *Culex pungens*. The females predominated probably in the ratio of six of that sex to one male. Toward the latter part of October the males seemed to be more numerous. Mosquitoes caught under the bar of patients in eastern Texas, suffering from malarial fever, in the latter part of September, showed two males and five females; six were *Culex pungens* and one *Culex triseriatus*. Mosquitoes caught in east Texas, along a small ravine, at about the same date, showed ten females and two males, all being *Culex pungens*. Another lot gathered in the same territory, from wells, sleeping rooms, barns and outhouses, were all *Culex pungens*. Another collection gathered about one mile distant from this locality, but this time from the edge of an artificial lake fed by a spring, were of the same species. Specimens from central Texas, collected during the first week of October, exhibited nine mosquitoes; seven were female *pungens* and two male *fasciatus*. Another collection from the same locality, collected about the end of October, showed about twenty female *Culex pungens*, half a dozen males; and in addition about twenty specimens of *chironomus*. In this collection there was one female *Anopheles punctipennis*, which was devoid of blood. Many of the culex were filled with blood. Two mosquitoes, caught in southern Texas, from a sleeping apartment—first week of November—proved to be one male *fasciatus* and one female *pungens*. About one dozen specimens of mosquitoes from the eastern coast of New Jersey collected in the last week of October all proved to be female *Culex pungens*. Some of the latter were caught in the cellar of an old barn located about one hundred yards from a fresh water pond which never dries up; while the others were caught about one-eighth of a mile distant and on a bar hung in a sleeping room.

TO KEEP MOSQUITOES ALIVE.

In order to study the sporozooids—germinal threads—of the malarial parasite in the tissues of the mosquito it is essential that the insect should be kept alive for a number of days after the blood has been taken into its stomach. Creagh has stated that they thrive well on a mixture of equal parts of brown sugar and dry sherry wine, which should be renewed every two or three days. Bancroft has recommended that a banana—with rind partly removed—be suspended near them and renewed every four or five days. Following Bancroft's recommendation I placed a mosquito in a wide mouth bottle and covered it over with a thin gauze. In the bottle, about every two or three days was placed a small slice of banana, and the gauze was daily sprinkled with water. The mosquito died on the fifteenth day. Of another collection treated similarly one lived from October 28 to December 16 (or 50 days): while another one of the same collection lived until December 26 (or 60 days). The insect may frequently be seen to attack the fruit immediately upon its introduction.

THE MOUTH PARTS OF THE MOSQUITO.*

The proboscis, beak or oral armature, consists of an epipharynx—or labrum—two mandibles for piercing tissues, two maxillæ—or jaws—and a hypopharynx. These mouth parts, when not in use, are enclosed within a scale-covered sheath called the labrum. When placed together the mouth parts form a tube through which the insect sucks its food. Morphologically in man the epipharynx corresponds to the hard palate—pharynx—while the hypopharynx corresponds to the tongue, or floor of the mouth. The hypopharynx was so named by Savigny in 1816. Evidently it is an error to speak of the mosquito as "stinging" a person.

The mastax is a term applied to any masticating portion of the alimentary tract posterior to the mouth. The mosquito *Culex pungens* seems to be provided with such an organ. At least an aperture is seen forming the roof of the dilated portion of the esophagus below the pharynx (see Plate 8, Fig. 5), with radiating lines from the inner surfaces. This aperture is lined with yellow chitin, as is the outer integument—exoskeleton—of the mosquito and other surfaces derived from the ectodermal layer.

The pharynx (Plate 5, Fig. 3) in the mosquito is located near the under surface of the insect's head, and in the median line. It has an oblong or oval shape, slightly yellowish in color and lined with chitin.

The esophagus of the mosquito (see Plate 5, Fig. 9), soon after it is given off from the pharynx, dilates into a kind of pouch and then passes downward into the dilated portion of the alimentary tract, lying within the thorax. Below this point it forms a sinuous canal until the widely dilated pouch is formed lying within the abdomen (so-called stomach). The lumen of the esophagus, after entering the abdomen, has a star shape and contains granular material (Plate 10, Fig. 3).

THE VENOMO-SALIVARY GLAND.*

It seems probable that the venomo- or veneno-salivary gland in the mosquito varies somewhat in shape according to the different genera, although my experience in this matter is not sufficient to make an absolute statement, and such is subject to correction.

The venomo-salivary glands are two in number, one on each side of the insect's neck in the anterio-inferior portion of the prothorax.

Prof. G. Macloskie of Princeton University was probably the first to accurately describe this gland of the mosquito. If there be previous writers, their work has not fallen into my hands. Macloskie's specimen (see Plate 7) was dissected by Dumas Watkins, in 1888. It is thus described by the former writer: "Working backwards from the hypopharynx I found that the duct is not readily identified with a low-power microscope. It has the usual chitinous lining surrounded by the nucleated hypodermis. It is distinguished from the trachea by the comparative smallness and constancy of its diameter, and by the absence of ramifications. It runs back in the lower part of the head beneath the nerve commissure for two-fifths of a millimeter. In the throat it bifurcates into two branches, being each as long as the individual segment, and running on the right and left of the nerve cord into the prothorax, where they terminate in glands of a characteristic structure.

"The glands are in two sets, one on each side of the insect's neck in the antero-inferior region of the prothorax. Each set consists of three glands resembling in structure, but not proportionately so long as the single salivary gland on each side of the prothorax of the house fly. The third gland, that occupying the center of each set, is different, being evenly granular, and staining more deeply than the others. Its function is without doubt the secretion of the poison. Each gland is about one-third of a millimeter long and one twenty-fifth of a millimeter broad. The three are arranged like the leaves of a trefoil and each is traversed throughout by a fine ductule, the three ductlets uniting to form a common duct, which is like a pedicle of the trefoil and is one of the branches of the bifurcated venomo-salivary

*Plates Nos. 3. 5.

Plates 7 and 8.

duct. Thus there are six glands, three on each side, two of them poisonous and four salivary, their secretion diluting the poison. I see muscles apparently inserted in the framework of this reservoir (Plate 7 *m*); but Dimmock seems to think that the hypopharynx is not furnished with muscles. However this may be, the pressure exerted on it by the surrounding parts when the mosquito inserts its piercing apparatus into the flesh or through the epidermis of a plant, being sufficient to propel the poison through the tubular axis of the hypopharynx into the wound, the reservoir must be furnished with a valve to prevent the reflux of the secretion. The poison is diluted by the secretion of the salivary lobes and the two efferent ducts, one from each set of glands, carry forward and commingle the venomo-salivary products in the main duct, and the stream is thus carried by the main duct to the reservoir at the base of the hypopharynx [tongue]." These observations were made on the *teniorhynchus* and a species of the allied genus *Anopheles*.

In my stained section (Plate 8, Fig. 7, and Plate 9, Fig. 3), it will be observed that the venomo-salivary glands of the *Culex pungens* have a different shape from that described by Macloskie, who worked with another species and another genus of mosquito. In his specimen the gland is described as being of a trefoil shape, while in Plates 8 and 9 the gland would appear to be pear-shaped, somewhat constricted in the middle. There appears not to be three lobes on each side of the insect's neck, but only one. The capsule of the gland takes a deep blue stain and contains scattered oval or round and dark nuclei. Within each gland the mucous spaces appear so arranged that the fluid is discharged into a depression in the center, and thence onward through ducts, one from each gland, they unite in front of the esophagus to form the main duct, which communicates with the mouth parts (hypopharynx). In certain areas the mucous spaces appear slightly granular, but are generally clear or glistening in aspect. Below the lobe of each gland, on either side of the esophagus, are seen (Plates 8 and 9) certain round glandular cells (gizzard) having a capsule similar to that of the salivary glands and with similar mucous spaces. They are seemingly joined to the outer wall of the esophagus, but I have been unable to trace any communication between them and the esophagus. Whether the shape or structure of the venomo-salivary gland in this insect could have any influence in storing up spores of micro-organisms I do not know. Reaumur, in the last century, believed that the function of the fluid from the venomo-salivary glands was to coagulate proteids and to promote the process of suction. It is known that the bite of the mosquito does not give rise to hemorrhage.

THE CROP.*

In dissecting the mosquito, especially in the area adjacent to the upper portion of the prothorax or pleura, there frequently comes into view a clear and glistening object composed of a delicate membrane containing air bubbles inspired during the brief interval preceding its death. Following up this body it is found to be attached to an enlarged portion of the esophagus in the thorax. This is the crop, an organ which acts as a reservoir for food. Before its relative position is disturbed, this pouch may sometimes be observed lying partly in the celom or abdominal cavity, and compressed against the anterior wall of the abdomen. In certain instances, on being drawn outward a rhythmic movement may be observed, probably due to the insertion of a small and oval-shaped muscle inserted in the neighborhood of its union with the esophagus. In one dissection this movement of the muscle was observed (low power lens), even after all the surrounding tissues including the head and neck had been removed. With each contraction of this small oval muscle a wavy undulation would be communicated to the esophagus. At intervals of about every ten or fifteen seconds the crop would contract visibly and the outer end would draw upward toward its attachment to the esophagus; finally this pouch began to make a series of quick jerks which lasted a considerable period. On detaching the esophagus the muscle still contracted, and on being dissected out was found to be attached to the tissues lying in the neighborhood of the venomo-salivary glands.

THE STOMACH OF THE MOSQUITO.*

The stomach of an insect is a term applied to a dilated glandular portion of the alimentary canal usually lying within the thorax. That which has been described as the stomach of the mosquito lies wholly within the abdomen. The esophagus, soon after it passes a point corresponding to the metanotum, begins to undergo a gradual dilatation into an oblong pouch forming the stomach. As in the case of the esophagus, the stomach is held in position by four strands of connective tissue extending from the outer surfaces in four directions and running outward through the fatty tissue toward the abdominal wall (Plate 10, Fig. 3). When the stomach is distended with blood, it occupies the whole abdominal area, and the outer abdominal wall, together with a very small amount of fatty tissue, alone remains as a protection. In this condition the Malpighian tubes are pressed downward in the median line, where they are observed to lie in bundles. In one of my sections, made through the central abdominal region—and through the stomach—the blood was found to be coagulated in a thick layer around the inner surface of the stomach, and remained a deep brownish color, while in the central cavity the degenerated products—hemoglobin, etc.—of the red cells were seen, many of which contained dark granules. In this area a few red corpuscles appeared to be normal and stained a faint bluish tint. This picture doubtless represents the products of digestion in this insect.

HISTOLOGIC APPEARANCE OF MOSQUITO'S STOMACH.*

Manson describes the histologic appearance of the stomach of the mosquito as follows: 1, an outer layer composed of ramifications of air vesicles of this insect; 2, two layers of muscular fibers, one longitudinal and the other circular; these cross each other at right angles, producing a sort of rectangular pattern; 3, beneath this a sort of structureless membrane, the mucous coat, which does not stain well—epithelial layer composed of several strata of cells.

The following description applies to the stained section (Plate 11, Fig. 2, and Plate 12) here presented: 1, an outer wall composed of a thin tunic of connective tissue containing a few deeply stained nuclei; 2, two rows of muscle cells with round nuclei; 3, a single layer of columnar epithelial cells with elliptic or rod-shaped nuclei; 4, an inner mucous (chitin) coat which does not stain well. In the third layer there *appears* to be more than a single layer of columnal epithelial cells, which is probably due to the folds or rugæ of the stomach.

THE MALPIGHIAN TUBES.*

The Malpighian tubes of the mosquito—*Culex pun-*

*Plate 5, Fig. 8.

*Plates 11 and 12. *Plate 5, Fig. 11.

gens—are, according to my dissections, five in number. They have their origin in that portion of the stomach which joins the small intestine, and after being given off from this portion of the alimentary canal, curl upward, outward and then downward, forming various loops which are closely woven together, and finally terminate below in the region of the small intestine, in small canals the distal ends of which are closed. The Malpighian tubes were formerly regarded as hepatic or liver tubules, but Lowne thinks they go to form a hepato-pancreas. By modern writers (Conklin and others) they are considered excretory organs—kidney tubules. In some instances their proximal extremity has a dark appearance due to the contained material. On cross section each tube is made up of an outer or connective tissue layer containing round, large and deeply staining nuclei, and an inner basement membrane which surrounds large cells—drain-pipe cells.

THE CIRCULATORY AND RESPIRATORY SYSTEMS OF THE MOSQUITO.

Insects have no system of arteries or veins, nor closed system of blood-vessels, and the blood flows freely among all the tissues. The circulatory system of insects is of a very primitive character, consisting of a dorsal vein open at both ends and divided into a variable number of cavities. It is situated on the dorsal surface, and in the median line of the thorax and abdomen. The dorsal vein performs the function of the heart in higher forms of life. With each pulsation of the dorsal vein, which begins at the posterior end, the blood is propelled forward into the head, and after passing backward freely among the muscles and other tissues, finally enters the body cavity—celom—and appendages. Within the abdomen the oxygenated blood circulates in close relationship with the air tubes, and in this way it becomes oxygenated while CO_2 is eliminated. No doubt there are smaller vessels by which the blood is again returned to the dorsal vein. The blood of the mosquito is colorless. I have not learned whether the circulatory system is the same in all varieties of mosquitoes, and do not know why the sporozooids of malarial fever should become stored up in one species of mosquito and not in another species.

The respiratory system of the mosquito consists for the most part of stigmata—tracheæ, spiracles or breathing tubes—the two larger of which pass downward from the mouth parts on either side of the anterior surface of the neck (Plate 5, Fig. 4), and probably have their external opening in the pleura or thorax (the forebody consisting of prothorax, mesothorax and metathorax). Ramifications of the air tubes are given off in all directions in the thorax. Spiracles are also present in the abdomen, and pass upward and communicate with the external air by oval shaped orifices, protected by muscles, placed beneath the dorsal segments or tergites.

The eggs of the mosquito are comparatively large in size, and of a round shape. They are generally found in masses and are held in position by a thin membrane almost transparent in color. They stain a deep purple with Delafield's hematoxylin solution. In certain instances karyokinetic figures were observed.

THE CELOM OR BODY CAVITY.*

The celom or body cavity of the mosquito is comparatively large. It extends from the upper limit of the esophagus above to the point where the Malpighian tubes have their origin in the lower portion of the stomach. Within the abdominal area it probably has no definite shape, depending on the amount of distention of the stomach. It is walled off from the fatty tissue about its edges by a thin but seemingly elastic membrane, from which strands of connective tissue radiate inward to become attached to the stomach. When the stomach is empty it appears to be suspended near the center of this cavity by means of these strands, and the tissue from the periphery presses inward, thus in part obliterating the celom. Within the thorax the celom is quite large. Plate 8, Fig. 8 represents a somewhat longitudinal section of the tissues about the celom.

*Plates 8, 9 and 11.

NERVOUS SYSTEM OF INSECTS.

It has been said that insects have no true brain as the meaning implies in the case of man. Plate No. 6 (see plate) evidently shows that the mosquito possesses a cerebrum and cerebellum. Some insects seem devoid of sensation. For the most part the nervous system is made up of ganglia, the largest collection lying within the head parts. From the cephalic ganglia or brain is given off a double nerve-cord extending the entire length of the insect. From the ganglia or different segments, nerve-fibers are given off in all directions. In the higher insects the thoracic ganglia are well developed and control the vital functions.

METHOD OF DISSECTING A MOSQUITO.

There are no guides on this subject. The routine method which I followed in many dissections may be thus described: Only the fresh specimen was used. The apparatus and instruments consisted of a Zeiss dissecting microscope; a pair of forceps with extra-fine points; two extra-fine needles placed in wooden handles; normal salt solution; killing fluid, such as absolute alcohol, chloroform or hot 50 per cent. alcohol. It was found best to leave the head and neck attached to the body throughout the dissection. Several hours were consumed in each dissection. The mosquito, after being killed, was placed on the glass stage of the dissecting microscope, and a few drops of normal saline solution added, after which the wings and legs were removed close to the insect's body. To dissect out the venomo-salivary gland see Macloskie's directions. A high-power lens should be used in this region. My dissections of these glands have not been entirely satisfactory. To find the esophagus, crop, stomach and Malpighian tubes is a comparatively easy task, patience only being required. Dissections should be made from above downward.

In removing the pharynx (Plate 5, Fig. 3) an incision was made in the median line of the head, cutting downward and from time to time adding normal saline solution in order to render the field clear. In searching for the crop and esophagus, the insect was caught by the remnants of the femora and the dissection was begun by laying open the upper portion of the prothorax on the dorsal surface, carrying the teasing process downward in the median line. Each individual fragment of tissue was removed, care being exercised not to exert too much force in its removal. From time to time normal saline solution was added to make the field clear of fatty particles, with which the insect was abundantly supplied. Working along the dorsal surface to a sufficient depth, a few strokes were made on the anterior surface of the thorax, when the clear and glistening crop would come into view, being recognized by its oblong or pear shape, glistening color and contained air bubbles. Following up its duct the esophagus was easily reached, being recognized by its tubular appearance, brownish color and elasticity. The esophagus was then followed downward, cutting through the scutellum. (Here some patience was required in order to prevent the head and

thorax from becoming detached. As a precaution it was found best to keep the abdomen pushed well up toward the thorax so that overstretching would be prevented.) The abdominal wall was then nipped in a number of places, exercising care so as not to injure the Malpighian tubes, when the fatty whitish particles would escape in large quantity.

To remove the stomach and Malpighian tubes, the esophagus was followed downward by cutting through the abdominal wall and gently teasing the fragments away. From time to time, if the two outer edges of the abdominal wall were placed on the stretch, the stomach and Malpighian tubes could be recognized, the former by its oblong shape, the latter by their loops. Normal saline solution was frequently added, and by gentle teasing all the fatty particles were removed, leaving the other part enclosed within its somewhat elastic abdominal wall. To get a complete dissection, usually three mosquitoes were necessary; one for the pharynx, one for the esophagus, crop and stomach, and one for the Malpighian tubes and rectum.

Ross imbeds in celloidin. These sections were imbedded in paraffin, cut with a Minot microtome, and stained with Delafield's hematoxylin solution.

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NOTE.—After this paper had been compiled an interesting article by W. N. Berkeley appeared in the *New York Medical Record* for December 23, 1899, entitled "An Account of Some Personal Work on the Mosquito-Malaria Theory with Remarks upon the Present Status of the Investigation."

BIBLIOGRAPHY.

In the preparation of Part I of this article (see JOURNAL) I have kept close to the words of Ross, Manson, Grassi and others, as printed in the *British Medical Journal* and London *Lancet*, and various abstracts of medical journals in this country, more especially to the article of W. B. James in the *N. Y. Medical Journal* for June 24, 1899. I regret that I am not more familiar with the extensive work of Koch in regard to this question. Some knowledge of the proper nomenclature of the younger forms of the sporozoa has been derived from the article by T. B. Futcher in the *Am. Jour. of The Med. Sci.*, September, 1899.

For Part II. a large list of books on entomology was consulted; but for the most part the article consists of original work, there being no guides on this subject. All the plates are from original drawings, except that of Macloskie.

NOTE.—Without the many courtesies extended me by Prof. E. G. Conklin of the Biologic Department of the University of Pennsylvania, this work could not have been done. My sincere thanks are also tendered to Mr. C. W. Johnson, curator of the Wagner Free Institute of Science, for his aid in classifying the mosquitoes and for correcting part of the manuscript. To the following named I am also under many obligations for favors shown: Drs. Alfred Stengel, T. C. Ely, W. L. Pyle, and A. O. J. Kelly, of Philadelphia; W. J. Condon, of New Jersey, and J. H. Sears, R. E. B. Bledsoe and Mr. J. W. Smiley, of Texas.

EXPLANATION OF PLATES.

Plate 1: Fig. 1, palpi. Fig. 2, proboscis. Fig. 3, antennæ. Fig. 4, thorax. Fig. 5, tibia. Fig. 6, abdomen. Fig. 7, foot claw. Fig. 8, front tarsus. Fig. 9, femora. Fig 10, hind tarsus.

Plate 2: Fig. 1, proboscis. Fig. 2, antennæ. Fig. 3, palpi.

Plate 4: Fig. 1, palpi. Fig. 2, costa, or costal vein. Fig. 3, proboscis. Fig. 4, antennæ. Fig. 5, first longitudinal vein.

Plate 5: Fig. 1, labium. Fig. 2, mandible. Fig. 3, pharynx. Fig. 4, spiracle. Fig. 5, venomo-salivary gland. Fig. 6, maxilla. Fig. 7, duct of venomo-salivary gland. Fig. 8, crop. Fig. 9, esophagus at a point corresponding to the scutellum or projecting hard part of the thorax (the metanotum is the space just below the scutellum, which separates the thorax and abdomen). Fig. 10, stomach. Fig. 11, Malpighian tubes. Fig. 12, small intestine. Fig. 13 colon. Fig. 14, rectum.

Plate 6: Fig. 1, simple eye of mosquito. Fig. 2, compound eye. Fig. 3, central portion of cephalic ganglia or cerebrum of mosquito. Fig. 4, ganglion cells. Fig. 5, cerebellum.

Plate 7: Anatomy of venomo-salivary gland and surrounding parts, Macloskie's dissection (*American Naturalist*, October, 1888). Fig. 1, *du*, venomo-salivary duct with its insertion in *hy*—hypopharynx; *cb*, cerebrum—below this is the cerebellum and the pumping enlargement of *oe*, esophagus; *lre*, base of labrum-epipharynx; *m*, muscle; *n*, nerve commissure—other parts removed. Fig. 2 is the venomo-salivary duct showing its bifurcation, and the three glands on one of its branches: *pg*, poisonous gland; *sg*, upper of the two salivary glands. Fig. 3 is the bifurcation of the duct, with its nucleated hypodermis.

Plate 8: Fig. 1, longitudinal section through base of labium. Fig. 2, section through palpi. Fig. 3, roof of pharynx. Fig. 4, part of cephalic ganglia. Fig. 5, mastax. Fig. 6, longitudinal section through upper portion of esophagus. Fig. 7, venomo-salivary gland. Fig. 8, celom or body cavity anterior to esophagus. Fig. 9, glandular bodies, probably gizzard. Fig. 10, longitudinal section through dorsal coat of esophagus. Fig. 11, scales of dorsal coat of thorax.

Plate 9: Part of Plate 8, greatly magnified. Fig. 1, duct of venomo-salivary gland. Fig. 2, longitudinal section through esophagus. Fig. 3, venomo-salivary gland. Fig. 4, glandular bodies—gizzard (?). Fig. 5, celom or body cavity.

Plate 10: Fig. 1, adipose tissue. Fig. 2, dorsal vein. Fig. 3, esophagus. Fig. 4, celom.

Plate 11: Fig. 1, dorsal vein. Fig. 2, transverse section through so-called stomach, showing arrangement of columnar epithelial cells with elliptic nuclei: owing to the folds of stomach it appears that more than a single row of these cells are present. Fig. 3, celom. Fig. 4, adipose tissue.

Plate 12: Part of Plate 11, greatly magnified; in this section the double row of muscle cells is near the periphery, and toward the cavity of stomach the columnar epithelial cells are depicted. Fig. 1, nuclei of muscle cell. Fig. 2, elliptic nuclei of columnar epithelial cells. Fig. 3, longitudinal section through a loop of a Malpighian tubule showing large round nuclei. The lumen of the tubule is also shown.

CLINICAL AND PATHOLOGIC NOTES ON SYMPATHETIC OPHTHALMIA.*

BY H. GIFFORD, M.D.

OMAHA, NEB.

Of the six cases of sympathetic ophthalmia which I have had the opportunity to observe in progress, only three have had features unusual enough to warrant my giving their histories.

CASE 1.—F. W., aged 27, came to me Feb. 6, 1896, stating that while at work in a machine-shop, that morning, he was struck in the left eye by a piece of steel. I found the right eye normal, with vision 20/20 +; the left eye had a very small perforating wound of the cornea and lens, with the latter so opaque as to entirely obscure the fundus. Vision was equal to fingers at two feet. As there was nothing to indicate the location of the piece of steel, and the giant magnet produced no effect, it was decided to wait until the lens became entirely opaque and then extract, with the hope of being able to see the fundus. The extraction was done after about ten days, through an incision in the upper limbus. So much lens matter remained behind, however, and the process of absorption was so slow, that no view was ever obtained of the fundus. A moderate reaction followed this operation, but as the congestion was subsiding and the light sense and projection of the eye were first-class, the man was allowed to go to his home in a neighboring town, returning every two or three days for observation. On March 16 the right eye was normal in every respect; the vision, 20/15. The next afternoon, without any warning in the way of pain or irritation, he noticed that the sight of his good eye was a little foggy. He came to me on the morning of the 18th, and I found the right eye to have a very slight ciliary injection, very fine opacities, visible only with transmitted light and + 20 D., on the anterior surface of the lens; the optic disc slightly hyperemic; and a small patch of faint whitish exudate in the retina close to the temporal side of the nerve, near the horizontal meridian. There was also a small patch of exudate at the inner margin of the disc. Vision =—20/30.

Nothing unusual had occurred in the injured eye, where congestion had been slowly but steadily decreasing with good light sense and projection. The eye was at once enucleated, but in spite of this—mercurial inunctions and atropin, to which the pupils responded promptly at first—the inflammation continued to in-

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crease slowly. The aqueous became so turbid and deposits on the lens so dense that no careful examination of the fundus could be made after the first day; numerous peripheral synechiæ developed, and the vision, within a week, was reduced to fingers at 5 to 6 feet. Then as the eye was steadily getting worse, the inunctions were stopped and 150 grains of salicylate given every day for three days. After this there was no change for nearly a week, whereupon the salicylate was renewed, 150 grains being given on four or five days in each week with hot applications. An improvement now set in and continued steadily until, on April 12, vision equalled 18/200. The salicylate was now stopped for several days and less atropin used, but the inflammation got decidedly worse, improving again when the salicylate was recommenced. On April 22 the vision was 20/50, and continued to improve under the same treatment until, on June 6, 1896, it was + 20/20 with the refraction corrected; and this vision has been maintained up to the present time without any relapse of the inflammation. As the inflammation decreased, the number of days in the week on which the large doses of salicylate were given was decreased; but 150 grains were taken on at least one day in each week for several weeks after the last signs of active inflammation had disappeared. On May 4, 1896, when this patient's vitreous had cleared up sufficiently to allow the fundus to be seen, a patch of retinochoroidal exudate with a small retinal hemorrhage could be seen at the nasal side of the nerve, with some new vessels in the retina, the nerve being blurred at its inner margin. Near the equator, down and out, there were a number of small, roundish, well-defined foci of choroidal atrophy, with slight rings of pigment; and other round whitish areas appearing like exudate in the retina. As the case progressed the exudate near the nerve cleared up entirely, leaving only the roundish patches of choroidal atrophy and some slight deposits on the anterior capsule to indicate the great danger through which the eye had passed.

CASE 2.—A. S., a boy of 17 years, on April 6, 1896, while trying to capture a wounded sand-hill crane, was pecked in the right eye. When seen by me on the evening of the next day, there was a large wound of the inner limbus, filled with shreds of iris and choroid, with the anterior chamber filled with blood. The chemosis was so extreme that the wound could not be examined well, and as there were strong indications of beginning panophthalmitis, the eye was simply cleansed and bandaged. The next day, under chloroform, the shreds of iris and choroid were cleared away, the bandage was renewed and full doses of salicylate were given. The improvement was quite rapid, the chemosis disappearing, the congestion lessening and the blood in the anterior chamber clearing up; so by April 22 it could be seen that the iris was nearly or completely missing; vision then being 10/200; vitreous opacities preventing a clear view of the fundus. A day or two after this he went out, got wet and caught cold. At this the eye became very much worse, the vision decreasing to fingers at six inches; with increased congestion and turbid aqueous. On April 30 the vision of the left eye, which had not been previously tested, was found to be 20/30, a little minus, and there was a very faint redness of the conjunctiva or episcleral tissue. This congestion was not a deep ciliary congestion, and as the eye was objectively normal in every other respect I unfortunately waited until the next day, when the patient for the first time noticed that his vision was a little cloudy, though the test showed the same vision as the day before; but the diffused congestion was more pronounced and a strong glass showed fine deposits on the anterior surface of the lens—not on Descemet's membrane—the nerve was perhaps a little hyperemic, but nothing decidedly abnormal could be seen in the fundus. The boy said that the night before he had severe headache. The right eye was now enucleated, and atropin and full doses of salicylate given. The membrane in the center of the pupilary space thickened, so that on May 4 the vision was only 6/200. There was considerable pain at night in the front and back of the head. May 6, 150 grains of salicylate a day having been given, the congestion was somewhat less, but soon after it became worse and the pupil slowly got smaller in spite of atropin and hot applications. This increase in the inflammation continued until about May 16, the vision being reduced to counting fingers at 1 to 2 feet. For a day or two before this the ordinary hot applications had made the eye feel worse, so flaxseed poultices were used, changed every few minutes for an hour at a time three times a day. At the same time the dose of salicylate was increased to 180 grains in the twenty-four hours. This produced a prompt and decided improvement, which continued steadily until May 28 when, after going without the salicylate for three days, taking pilocarpin sweats instead, the eye became painful and congestion again increased, whereupon the large dose of salicylate was used again on three or four days in each week and the inflammation gradually decreased until, on June 17, the eye was free from inflammation externally, vision was 8/200, a large opacity in the vitreous preventing a view of the fundus. He left the hospital in July, with the eye quiet and vision 20/70, the vitreous being still quite turbid. He has had no return of the inflammation, but when seen again after nearly a year, it was found that the lens had become quite opaque and the vision was reduced to counting fingers at 6 to 8 feet. He was last seen on April 18, 1899, when the opacity of the lens was found to have increased slightly, but he could still find his way about readily; the pupil was about 6 mm. in diameter, its edges firmly adherent to the lens. An attempted iridectomy removed only the anterior layers of the segment of iris seized. It is quite possible that he may still have his vision considerably improved.

CASE 3.—Mrs. E. E., aged 59, came to me May 13, 1898, with immature cataracts. The right lens was needled slightly, this being followed by considerable swelling of the lens, the upper part of the iris being pushed forward so that when the lens was extracted, the incision button-holed the iris, leaving fragments which were hard to remove completely from the angles of the wound. A very small one of these healed in at the inner angle, but when she left the city, on June 17, with vision 20/50, this seemed to be entirely covered with conjunctival epithelium, and did not project at all above the surface; the neighboring sclera, however, was slightly congested. A month later, with more accurate correction, her vision was 20/30— with the operated eye. She returned Dec. 28, 1898, stating that the right eye had been a little inflamed for a few weeks after she reached home, but since then had given her no trouble, except now and then to feel as though something were in it. About the 1st of September she got much heated and exhausted crossing a rough field and, within a few weeks thereafter, noticed that the sight of the right eye was getting poor; this was followed by decrease in the sight of the left eye, which at the time of her visit to me

had had vision of —20/100. This decrease in vision has continued, although she has had no discomfort, nor to her knowledge any inflammation in either eye. I found the right eye to have a few large vessels in the neighborhood of the entangled bit of iris, but the eye was otherwise free from congestion; the pupil was freely movable and showed no signs of iritis; the vitreous, however, was full of fine opacities, and the vision with correction was only 3—5/200. The left eye showed the merest trace of deep ciliary injection below—ordinarily I should not have considered this abnormal, and am not certain that it was so. The corneal surface was slightly stippled below, with an extensive deposit of fine dots on its posterior surface. The pupil was small, nearly secluded by firm synechiæ on which atropin had no effect. Vision was equal to fingers at two feet; projection good. A sweat cure produced a slight improvement in the vision of the right eye, but there were no new developments until this spring, when, on May 6, 1899, she returned, stating that the left eye had been badly inflamed for about two weeks. I found the operated eye unchanged, but the left eye was deeply congested as far back as could be seen. Salicylate promptly relieved this, and as the tension was found to be a little high, an iridectomy was made four days before this writing. This was followed by a very little reaction, and as the sight of the eye is good considering the opacity of the lens, there is some chance that if the inflammation can be kept from returning she will eventually get useful sight in the eye.

Any one who has not seen this last case might question the diagnosis of sympathetic ophthalmia here, but I have no doubt whatever that it is one of the mild forms of this disease, and that the bit of iris in the angle of the wound of the operated eye was the starting point.

I have not completed the microscopic examination of the enucleated eyes from the first two cases. The main conditions of importance thus far found are practically identical in both; the ciliary body is densely infiltrated with leucocytes, this infiltration extending back into the choroid and suprachoroidal space, becoming more pronounced toward the posterior pole of the eye, where the posterior third of the choroid is so spread out by inflammatory products as to be five or six times as thick as normal. The evidences of inflammation, as shown by an increase in the number of leucocytes and in the connective tissue cells, is marked along the vessels and nerves penetrating the sclera from the limbus to the posterior pole of the eye, and to a slight extent in the peripheral extremity of the intervaginal space of the optic nerve. There is also a slight increase in the number of leucocytes in the vitreous, this being most marked in the ciliary region and in front of the optic nerve, the physiologic excavation of which is full of them. On the other hand, farther back in the nerve, there are no very decided evidences of inflammation along the central vessels, as my previously published experiments on rabbits would lead one to expect. In the optic nerve trunks there may be some increase in the nuclei along the trabeculæ; but this is certainly not marked enough to indicate that any germs passed this way. At one point the infiltration of leucocytes seems to have broken through the wall of one of the vorticose veins on its passage through the sclera. The retina is slightly infiltrated with leucocytes through about the anterior tenth and at several points between this and the optic nerve. Aside from this it is apparently normal. In the eye of Case 1 nothing was found of the piece of steel which originally injured the eye, and as the rather peripheral wound which was made to extract the lens was filled with a mass of leucocytes and broken up iris tissue, it is probable that the cause of the sympathetic ophthalmia was the operation wound rather than the original injury.

All of these cases indicate three points of importance; the first is the entire absence of the premonitory symptoms, such as photophobia, ciliary injection, and asthenopia, which most books still give as the warning of danger from sympathetic ophthalmia. None of these patients, nor of any of the others whom I have seen with genuine sympathetic ophthalmia, had anything of the sort. The uninjured eye felt entirely well up to the time when the appearance of inflammatory products showed that the inflammation was there and, as the event proved, in such a way as to progress steadily in spite of prompt enucleation in most of them. The second point is the importance of daily tests of vision, especially in cases which are not under the constant observation of an oculist, since in the cases in which the entire course of the disease could be watched, the failure of vision was the symptom which would first have attracted the attention of a non-expert. The third point is the value of large doses of salicylate of sodium after the disease has broken out. I had treated my other cases with atropin, hot applications and mercurial inunctions without any effect that I could determine, but the influence of the salicylate in these later cases was so marked and its result on the whole so favorable that I do not hesitate to recommend it as the most important remedy that I know for the disease. It should be noted, however, that the amount used was so large as possibly to be thought excessive by some; 180 grains in the twenty-four hours had to be given in Case 2, before the disease was checked. This was given in 15-grain doses in a teaspoonful of brandy, and the patient kept in bed while the salicylate was being taken. As the boy's weight was not over 130 lbs., a full-sized man would require at least 200 grains as a proportionate dose. Perhaps it is also worth mentioning that in Case 2, and in one other which I have seen, heat applied in the ordinary way—i. e., moderate-sized pieces of cloth or cotton wet with hot waater and changed every half minute—seemed to act unfavorably, while the greater body of heat furnished by poultices, changed frequently, seemed to do much more good. The explanation for this may be that in these cases much of the inflammation was seated so far back in the eye that the milder heat reached the deep-seated inflammation only in such a degree as to stimulate rather than to check it. I have had a similar experience in deep-seated affctions of the mastoid.

With regard to the bearing of these cases on the theory of sympathetic ophthalmia, the entire absence of the symptoms of sympathetic irritation certainly speaks against the influence of the ciliary nerves as an important factor. While the pathologic conditions, in spite of the fact that I have, as yet, found no germs in the eyes, show plainly the existence of an infectious inflammation, strongly pronounced in the posterior as well as the anterior region of the eye; passing out of the globe along numerous avenues which might lead to the other eye; or, as indicated by the condition of one of the vorticose veins, into the general circulation. The presence of inflammatory products in the anterior chamber, simultaneously with the occurrence of retinitis at the posterior pole of the second eye, in Case 1, and before the occurrence of marked ophthalmoscopic changes at

the posterior pole, in Case 2, are about what the anatomic conditions would lead us to expect if the disease had spread down from the cranial cavity through the intervaginal space; since from the peripheral extremity of the latter the short distance to the retina and to the optic disc is probably compensated for by the freer communication with the iris and ciliary body through the suprachoroidal space. Without pretending to have looked up the point thoroughly, I do not remember that fresh retinal exudate had previously been observed in sympathetic ophthalmia. The roundish patches of choroidal atrophy visible in the later stages, in Case 1, were exactly like those previously described by Hirschberg, Haab and others; and are simply one more indication that sympathetic ophthalmia is a diffused inflammation of the choroid as well as of the ciliary body and iris.

Whether the inflammation reaches the second eye through the optic nerve trunks via the chiasma, as first suggested by Alt or possibly by Mackenzie—the latter's language is ambiguous on this point—or through the intervaginal and subdural spaces, according to Leber and Deutschmann, or along the vessels penetrating the eye and passing through the orbit to the cranial cavity, as first suggested by me and considerably later by Gayet, or through the general circulation as suggested by Berlin, may be considered an open question. I am inclined to think that any one of these paths may at times be taken, but I firmly believe that sympathetic ophthalmia is an infectious disease caused by germs which are yet to be determined on. The main objection to the germ theory of sympathetic ophthalmia is that germs have so seldom been discovered in enucleated eyes; and none but Deutschmann has been able to produce anything like sympathetic ophthalmia in animals. Since the latter of these objections applies equally to any other theory, it need not be considered. Against the other objection may be urged: 1, that many of the eyes examined with negative results have been enucleated not for real sympathetic ophthalmia but for sympathetic irritation; 2, that the difficulty of identifying germs in the tissues with the microscope, unless they are extremely numerous, is so great that the failure to detect them is of very little value as a proof of their absence. Perhaps the most striking example of the difficulty of the microscopic determination of well-known germs in the tissues is given by the tubercle bacillus, which, in the less virulent forms of tuberculosis, is rarely discovered with the microscope, but is generally proved to exist only by inoculating the lower animals. Now, the eyes which cause sympathetic ophthalmia are generally the seat of a slow inflammation such as we should expect to be caused by a comparatively small quantity of germs and, until we have some test for them as reliable as the inoculation test for tuberculosis, it need not surprise us greatly if the germs of sympathetic ophthalmia elude our search. Furthermore, if the negative results of microscopic examinations be allowed important weight against the germ theory of sympathetic ophthalmia, they prove too much, for they could then be urged with equal justice against the germ theory of plastic inflammation in general: that is to say, if, after a wound of the eye in which no foreign body nor chemical irritant is left behind, we have a progressive plastic inflammation such as the microscope showed to have taken place in Case 2, we find no germs with the microscope, we can not urge this against the germ theory of sympathetic ophthalmia without implying that germs had nothing to do with the inflammatory sequelæ of the original wound; a proposition which I think would be scouted by any modern pathologist. It seems to me that we may assume the infectious nature of sympathetic ophthalmia with the same confidence that we may assume that of syphilis or smallpox. The clinical history and the pathologic conditions are such as we have every reason, from analogy, to believe are caused only by living germs; and the fact that we have not found them simply points to the necessity for further research, without invalidating the theory.

Finally, with regard to the theory of Schmidt-Rimpler, which combines the germ and ciliary-nerve theories, and assumes that on account of the vasomotor disturbance occasioned in the well eye by the irritation in the injured one, germs which may have entered the circulation from any part of the body find a suitable environment for their development in the well eye, I must say that this is opposed to a vast amount of important clinical testimony. If sympathetic ophthalmia depended merely on the coincidence of ciliary irritation and the accidental presence of germs in the circulation, why should we never hear of sympathetic ophthalmia in the tedious ciliary irritation existing with the numerous cases of one-sided keratitis, whether of trachomatous herpes, phlyctenular or other origin? This seems to me a fatal objection to the theory, unless we add still another theoretic assumption, namely that if the germs reach the second eye through the circulation, they must come from the injured eye; either because, from the start, they were especially adapted for growth in the eye, or because through a process of natural selection in the course of their growth in the first eye, the survivors have become especially fitted to attack eye tissues in general. I do not pretend that I have any great confidence in the theory as thus elaborated, but it seems to me that without such an addition the theory of Schmidt-Rimpler will not stand the test of clinical experience.

DISCUSSION.

DR. S. D. RISLEY, Philadelphia—I would like to inquire whether any member of the Section has seen a case of migratory or secondary ophthalmia where the primarily-affected eye had not been opened either by accident or disease or by operation? I have not seen such a case, a fact which seems to me to suggest that the primarily-injured eye must have contained germs which have migrated to the secondarily-involved eye. The last case reported in the paper recalls the history of one I reported to this Section several years ago. A hernia of the iris, following an injury, was immediately excised. The eye recovered without marked reaction, but in a few weeks became the subject of acute, non-suppurative iridocyclitis. The vision sunk to the ability to count fingers, but under treatment slowly improved to 20/30. Then came the onset of trouble with the fellow eye, characterized by hyperemia of the disc, followed by general fluffiness of the fundus and later by the deposition of exudate in the vitreous and on the posterior surface of the cornea. Vision failed rapidly to the ability to count fingers with difficulty, but, as the vision was so good in the primarily-injured eye, 20/30, it was not removed. The secondarily affected eye also slowly recovered normal sharpness-vision under treatment which was maintained for ten years, when the patient returned with sympathetic irritation and a cyst of the iris at the site of the primary injury, with well-marked iridocyclitis. The eye was excised.

DR. C. W. HAWLEY, Chicago—I am interested in this because at the present time I have a case of sympathetic ophthalmia. Some two months ago I attempted to remove a calcareous lens from the right eye. On attempting the iridectomy the iris was found to be so degenerated that it was impossible to make one. I tried several times, and then my assistant tried. In these attempts we lost all the fluid vitreous and the eye completely collapsed. We bound up the eye until the next day, when to

ur surprise it had refilled, and it seemed to do nicely for ome time, when she suddenly complained of loss of vision in he sound eye. I told her we must remove the old eye at once, ut she did not give consent until the next morning, when we ere allowed to remove it. At this time there was no apparent nflammation in the left eye and vision soon returned to 6/6. The day after the enucleation the irritation had entirely gone, ut the next day it appeared again and the eye went through he various degrees of sympathetic ophthalmia. I adopted the lan which Dr. Gifford has suggested, of giving large doses of alicylate of sodium, and improvement began immediately, so hat when I left home more than two-thirds of the vision had eturned.

DR. D. S. REYNOLDS, Louisville, Ky.—I was somewhat surprised to hear my distinguished colleague from Philadelphia ay that sympathetic ophthalmia does not occur unless the injured eye has been penetrated.

THE PRESIDENT—Dr. Risley simply asked whether any one ad seen such a case.

DR. REYNOLDS—I am glad to be corrected. I am certain I ave seen in rheumatic and gouty people many forms of traumatism involving the ciliary region of the eye, without perforation of the globe, in which sight gradually faded from the injured eye; and, before the completion of which ciliary irritation with increasing dimness of sight, unattended by increase of ocular tension, appeared in the fellow eye. I have seen well-characterized sympathetic irritation produce complete blindness in persons free from rheumatic or gouty taint, and in whom the injured eye was not perforated.

As to the treatment of sympathetic ophthalmia, whether irritative or infectious, wide discrimination in the choice of remedies must be exercised. In the infectious type I am sure nothing short of enucleation can offer any reasonable hope of relief to the fellow eye. In the irritative type I am sure the salicylate of sodium, and sometimes the muriate of pilocarpin, are most precious, and often efficient remedies.

As to the use of poultices and hot applications, so strongly advocated by the late Dr. Williams, of Cincinnati, and still practiced by his worthy successor, Professor Ayres, I have only to say that they have uniformly disappointed me, and I have long since abandoned them.

I have seen sympathetic irritation come on years after the removal of the fellow eye. In a patient I have in mind, a woman 26 years of age, whose eye had been removed seven years previously, and in whom there was constantly present morbid sensibility of the tissues in the orbit from which the eye had been enucleated, there were periodic attacks of irritation, with morbid sensibility to light in the fellow eye. Examination of the patient led me to suspect neuroma, such as surgeons prescribe as amputation neuroma. I proceeded to dissect out and remove the fused mass of tissue, and had the satisfaction of observing prompt and permanent disappearance of the sympathetic irritation in the fellow eye. Mr. George Lawson reported a case of sympathetic irritation coming on more than forty years after the injury, and in which removal of the blind eye failed to arrest the progress of the disease in the fellow eye. Other cases have been reported where persons have gone in safety for more than forty years before sympathetic irritation appeared.

DR. C. F. CLARK, Columbus, Ohio—I would like to add my testimony to what Dr. Reynolds has said concerning sympathetic ophthalmia without a break in the globe. I once was consulted in a case in which a contusion was produced by a sling-shot, and a few weeks later the child was brought to me with papillitis and iritis. This was ten or twelve years ago. I removed the injured eye and the secondary trouble subsided, leaving the patient with good vision.

DR. C. H. WILLIAMS, Boston—I would like to ask Dr. Gifford whether he has ever tried, in the early stages of sympathetic irritation, the application of the aqueous solution of suprarenal capsule? I lately had a case where it seemed as if that reduced the irritation and congestion and there was no subsequent return. It was used in the strength of about 2 grains to the dram, applied three times daily and made fresh at the time of each application. A single case does not count for much.

DR. H. GIFFORD, Omaha, Neb.—Was it sympathetic ophthalmia?

DR. WILLIAMS—Well, that is an open question. It seemed to be.

DR. S. D. RISLEY, Philadelphia—In which eye?

DR. WILLIAMS—In the eye in which the irritation developed; not the injured eye.

DR. G. E. DESCHWEINITZ, Philadelphia—In discussing this subject we should be certain whether we are discussing sympathetic ophthalmia or sympathetic irritation, for they are quite different. I have had the pleasure of making such microscopic examinations as Dr. Gifford has pointed out, and they were identical with his. I could not find evidence of the passage of microbes from one eye to the other, in any of the cases, but as Dr. Gifford has pointed out, that does not invalidate the microbic theory.

DR. MARPLE—Dr. Knapp presented a case in New York as a text for the treatment of prolapse of the iris. It caused considerable discussion and was made the special subject of discussion for one evening, as to the wisdom of pursuing the expectant plan. This past winter I had the opportunity of making the examination on the eye of a patient of Dr. Gruening, the wound absolutely limited to the cornea. The child was struck with a piece of glass which produced a transverse wound 4 mm. long on the cornea, reaching nearly to the limbus, but not wounding the ciliary region. When the child was brought in, the mother would not consent to the freeing of the iris from the wound, and it was our privilege to watch the sympathetic trouble develop in the other eye until the mother finally gave consent to have the eye enucleated. This seems to suggest that in these cases of recent prolapse of the iris it is the part of wisdom to remove it instead of allowing it to remain entangled in the wound.

DR. J. A. LIPPINCOTT, Pittsburg, Pa.—I have seen a good many cases of sympathetic ophthalmia, and my experience is not very pleasant with regard to the prognosis. I have seen some good results from the subconjunctival injections of bichlorid in physiologic salt solution. I have not used the salicylate of sodium, but shall certainly try it in a case I am observing at present.

DR. A. B. HALE, Chicago—It is not fair for us to accept any statement as to non-penetrating wound of the eye until we have very positive proof that there was no entrance of germs. I think that in all injuries of the eye, either by blunt instruments, or where there has been some abrasion of the epithelium, we should try some staining method to determine whether the epithelium is intact. I am not an adherent of the germ theory of sympathetic ophthalmia, but we should prove every step of our argument, either for or against any theory.

DR. EDWARD JACKSON, Denver, Colo.—I have had the opportunity of watching four cases of sympathetic ophthalmia, and all were from penetrating wounds. Two I saw before the appearance of inflammation in the sympathizing eye, and one within a few days after the appearance of the symptoms. In the last case the media was somewhat cloudy, but when first seen there was a very marked papillitis. In the others there was no clear evidence of trouble in the back part of the eye before the media became hazy. Three of the four cases recovered good vision. Dr. Gifford said that in none of his cases were there any of the premonitory symptoms as described in the text-books, and the same was true of mine. It is almost certain that the older descriptions of sympathetic ophthalmias have confused irritation with inflammation.

DR. C. A. VEASEY, Philadelphia—Concerning the employment of intraocular injections of various solutions, in this or any other affection, the experiments of deSchweinitz, reported to this Section a few years ago, proved conclusively that in almost every instance their use resulted in permanent injury to the integrity of the eyeball. In regard to the subconjunctival injections of mercuric chlorid, it has been my privilege to study its action in only one case of sympathetic ophthalmia, and in this case I am quite sure no benefit was obtained from its use.

DR. H. GIFFORD, Omaha, Neb.—As to Dr. Williams' question regarding the suprarenal extract, I have not used it in these cases, but I have been disappointed with it in other deep-seated inflammations. In regard to enucleating the injured eye, the whole question seems to me to depend on the vision of that eye.

If I saw a case of sympathetic ophthalmia I would not remove the first eye if it had useful vision. On the other hand, if the injured eye has no vision, or it is very low, it is wise to enucleate at once, since statistics plainly show that enucleation increases the chance of vision, even when it is done late.

THE VALUE OF CYCLOPLEGIA IN OPTOMETRIC EXAMINATION.*

BY C. M. CULVER, M.D.

ALBANY, N. Y.

This paper is, at least in part, deduced from a review of the records of examination of 1000 eyes of my own patients, in private practice, in which artificial cycloplegia has been purposely produced for the sake of optometric examination. The case records of 5257 of my first private patients have been required in order to have the desired data concerning 1000 eyes. Of the cases in which cycloplegia had been produced for the purpose of optometric examination, 19.7 per cent. were unfit for use in the preparation of this paper, because of the incompleteness of my novitiate records, which incompleteness prevented the desired comparison of the seeming static refraction, before cycloplegia, and that found during cycloplegia. The number of eyes, the records of whose examination are trustworthy—1000—was chosen partly because of the facility of computing percentages from that number and partly because time for reviewing a greater number was not found. The usual effect of cycloplegia, showing itself as an increase in the discoverable amount of hyperopia or decrease in the strength of a concave lens necessary to enable the myopic eye to see well, has, in this paper, been called a gain. In some cases the opposite effects were obtained; that is, the hyperopia has appeared less or the myopia more, during cycloplegia, than before it was produced; such eyes have been accounted as furnishing a "loss." Of the 1000 eyes, 89.9 per cent. furnish gain, 4.5 per cent. furnish loss and 5.6 per cent. neither gain nor loss. These percentages may have been affected by the fact that the examiner is apt to use a deal of effort and patience to bring the manifest hyperopia as nearly as possible to the total before having recourse to artificial cycloplegia. A gain of any amount of corrigible astigmatism has been estimated at half that amount, numerically, since a unit of gain, at right angles to the cylinder-axis, seemed to need to be averaged with the zero in the direction of the axis; which average seemed fairly stated as one-half the sum of the two. The rays entering an eye are proportionately more refracted as they are farther from the line of vision. This is partially or wholly explanatory of the 4.5 per cent. of cases in which cycloplegia resulted in what has here been called loss. It has been sought to eliminate the influence of existing fundus inflammation, in the cases reviewed, since the effect of no cycloplegic drug can neutralize the effect of such inflammation. Acting on the instruction of Dr. Edward Jackson and the corroborative testimony of Dr. Florence Mayo's investigations, it was assumed by me, years ago, that the instillation of a 2.5 per cent. solution of the hydrobromate of homatropin, in an eye, six times, at intervals of five minutes, will produce cycloplegia within an hour from the time of the first instillation. Such cycloplegia has not always resulted. In a few cases the instillation of the cycloplegic solution needed to be continued. In 14 cases of the 1000 eyes under consideration, the eye whose cycloplegia had been so sought could read Jæger's No. 2, at 24 cm., an hour after the time of the first instillation. In some of such cases the incompleteness of the cycloplegia may, perhaps, be explained by the carelessness of the person who made the instillations, although the attendants who have been entrusted with the use of the cycloplegic have usually been carefully taught, by the examiner or some experienced attendant, in the method of its use.

The total gain in the 1000 eyes was 640, 732 diopters; the total loss was 13,875 diopters; total, 626,857 diopters. Hence, average gain was .6268 diopter. There were 799 of the eyes which furnished gain, 44 loss, and 157 neither gain nor loss; 299 eyes furnished a gain of .5 D. or less; 218 gain of more than .5 D., but less than 1 D.; 96 a gain of more than 1, but less than 1.5 D.; 45 a gain of more than 1.5 D., but less than 2 D., and 17 a gain of more than 2 D., but less than 2.5 D.; 14 furnished a gain of more than 2.5 D., but less than 3 D.; 7 a gain of more than 3 D., but less than 3.5 D., and 2 a gain of more than 3.5 D., but less than 4 D. None of the eyes furnished a gain between 4 and 5 D.

One eye furnished a gain of 5.5 D. It was the *right* eye of a girl with slight convergent strabismus, whose *left* eye furnished a gain of 3.5 D. She was 11 years old when examined, in 1894; the use of Dr. Casey A. Wood's ophthalmic discs, No. 342, one hour, raised the hyperopia of the right eye from 2.5 to 8 D., that of the left from 2.5 to 6 D.; each eye was astigmatic, the right by .75, the left by 2.25 D.; this amount of astigmatism was common to each eye before and during the cycloplegia. It seems worthy of note that, in each of these eyes, the obtainable acuteness of vision was greater during than before cycloplegia; that of the right was increased from less than 6/9 to 6/6 of Snellen's standard, and that of the left from less than 6/21 to 6/12 of Snellen's standard, by the cycloplegia, or, at least, during it.

Forty eyes furnished a loss of .5 D., or less; 2 a loss of more than .5, but less than 1 D.; 2 a loss of more than 1, but less than 1.5 D., and none of the eyes furnished a loss greater than 1.5 D. None were those of persons less than 5 years old; 31 eyes of persons from 5 to 10 years old gave an average gain of 1.05 D.; 92 eyes of persons from 10 to 15 years old gave an average gain of 0.75 D.; 225, of persons from 15 to 20 years old, gave an average gain of 0.56 D.; 228, of persons from 20 to 25 years old, gave an average gain of 1.219 D.; 160, of persons from 25 to 30, gave an average gain of 0.58 D.; 128, of persons from 30 to 35, gave an average gain of 0.664 D.; 101, of persons from 35 to 40, gave an average gain of 1.05 D.; 25, of persons from 40 to 45, an average gain of 0.54 D.; 7 were those of persons between 45 and 50 years old, and gave an average gain of 0.446 D.; 3 were those of persons between 50 and 55, and gave an average gain of 0.125 D.

In a few cases I have found more hyperopia evident some time after cycloplegia than before or during it. Case 5231, a woman, 23 years old, had 100 per cent. of visual acuity, according to Jackson's standard, with each eye, without a glass or with convex, spheric .75 D., the ciliary muscle being normally contractile, on Sept. 10, 1895. On October 2, 2.5 per cent. solution of hydrobromate of homatropin was instilled in each eye, as described above. Seventy-three minutes after the first instillation, each eye had the same visual acuity—100 per cent. Jackson—with each convex, spheric 1.25. On May 26, 1899, each eye had the same visual acuity as on the former dates just given, with each convex,

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spheric 1.75. How this is to be explained, since no disease was found in either eye at any of the examinations, is a question I ask—not answer. Another similar experience is somewhere recorded in my case records, but the time to seek its history has not been found.

Experience with the 1000 eyes in question has helped me to the conclusions:

1. A solution of 2.5 per cent. of homatropin hydrobromate, instilled six times, at intervals of five minutes, provides trustworthy cycloplegia in the average, healthy human eye, in from one to three hours from the time of the first instillation; usually in an hour or ninety minutes.

2. As a rule the protracted use of a 1 per cent. solution of the sulphate of atropin is no more effective, as a cycloplegic, than is the 1:40 solution of the alkaloid above mentioned.

3. In 10 per cent. of patients consulting an ophthalmic surgeon, it is desirable to produce artificial cycloplegia. In such cases the production of cycloplegia is inevitable, if the examiner will provide refractive corrections that shall afford the patient the *best* service.

DISCUSSION.

DR. EDWARD JACKSON, Denver, Colo.—My experience with homatropia is that it is as reliable as any other mydriatic. I have used it for fifteen years, chiefly for private practice; and the other mydriatics in hospital work. So I have been able to compare the results obtained, and testimony of that sort is worth more than single failures of the drug to produce mydriasis. There is no mydriatic that has not failed me at times, but it has happened just as rarely with homatropia as with any other. With reference to cyclopegics, the idea that they are chiefly valuable in revealing hypermetropia is a mistake. The assistance they give in measuring the astigmatism and in showing the exact amount of anisometropia is their greatest value. Any of you will find, if you study your cases of hypermetropia carefully, that the amount which is latent is not constant in any case. It is not constant for a week, perhaps not even an hour, and if you are testing the two eyes without a mydriatic, you may get all the hypermetropia manifest in one eye and fail to get it manifest in the other, so that you are constantly liable to make a mistake between the two eyes. In the cases I have seen, where the correction has been made without a mydriatic, and I have afterward reviewed it with a mydriatic, the greatest fault often has been in the inequality of the amount of hyperopia left uncorrected; I am sure a low anisometropia of that sort gives quite as much trouble as a low anisometropia that has always existed.

DR. E. J. BERNSTEIN, Baltimore, Md.—I have been using homatropin for six years, and just this year I have had a number of instances of poisoning, or rather of constitutional effects. I have used only a 1 per cent. solution of Merck's salt, and use a drop in each eye every ten minutes until full mydriasis occurs.

DR. CASSIUS D. WESTCOTT, Chicago—One of the chief advantages of atropin over homatropin is in the fact that when we use atropin we make repeated examinations on different days. I quite endorse all that Dr. Jackson has said and especially that it is not so important to bring out all the hypermetropia as it is to estimate the astigmatism accurately, and to find out the difference between the two eyes. I too have observed the constitutional symptoms from homatropin more during the past year than ever before.

DR. W. T. BACON, Hartford, Conn.—I can not see why Dr. Bernstein should have toxic symptoms with his homatropin if he uses it correctly, and by that I mean allowing the drop to flow slowly over the cornea, instead of putting it in the lower cul-de-sac, and directing the patient to hold the finger over the lacrimal sac. I have had constitutional symptoms but once in the last twelve months. I think the Doctor has struck a lot of cases that probably had an idiosyncrasy against mydriatics. I have had a case where 1 drop of duboisin produced fainting inside of a minute and a half after it was used, and the patient was a powerful young man. I was not sure it was the duboisin at first, and tried it the second time, but I have no desire to try it a third.

DR. H. MOULTON, Fort Smith, Ark.—I wish to call attention to scopolamin, which is a most valuable compromise between atropin and homatropin, and I believe it is a reliable remedy. I have been using it in the strength of 1/10 of 1 per cent., repeated every ten minutes. At the end of an hour the examination may be made. I have found that in cases in which I had used homatropin thoroughly I was able to bring out a still higher degree of refractive error by the use of scopolamin.

DR. W. L. PYLE, Philadelphia—Cases of poisoning from homatropin are certainly rare, and I have never seen a case except in a series that occurred to me, and in that instance I found I was not using the pure drug. I would suggest that likely such was the trouble in Dr. Bernstein's cases, as I understood him to say that they all occurred in one series.

DR. GEO. F. KEIPER, Lafayette, Ind.—In regard to the use of scopolamin, the chemists have decided that that drug is nothing more than an impure atropin.

DR. B. A. RANDALL, Philadelphia—There is one point in regard to the use of mydriatics that has not been brought out, though urged by some of us for many years, and that is the superior value of hyoscyamin for many cases. It obtains its full power in less time than atropin, and retains it some seventy hours after the last instillation, with a thoroughness and completeness that is not equalled, and then has only some fifty hours of the trying stage of returning accommodation.

DR. H. M. STARKEY, Chicago—It has been a great pleasure to me to hear Dr. Culver's paper. There has been so much pernicious writing by certain ones in high authority, against the necessity of the use of cycloplegia in these examinations, that it is a distinct advantage to have a clear exposition of some reasons why those writings are pernicious. Each passing year with me but increases my distrust of optometric examinations made without cycloplegia. Twenty years ago, cycloplegia did not seem one-half the importance it does to-day.

I am also glad to hear of Dr Moulton's experience with scopolamin, since a drug that will produce certain results with a minimum of inconvenience to patient and physician, should be welcome. Scopolamin has been in daily use in my practice, both private and dispensary, for more than four years. For optometric examinations, it is employed half a dozen times where all other cycloplegics are used once, and because it is reputed to have less tendency than atropin to induce glaucoma, it is chosen in many cases of iritis in elderly people, and when for any cause there is fear of increasing the tension of the eyeball. In the many hundreds of cases, in which my associate, Dr. Mann, and myself have used this drug, we have seen no serious nor even annoying symptoms produced. There is rarely a little flushing following its application, but that is the extent of the unpleasant action observed. The advantages in its use, that have appealed to us, are its safety, its certainty, its convenience and its cheapness.

As to safety, after using scopolamin for so long a time and in so many cases, we feel as safe in its use as we can in any remedy whatever. While at least one case has been reported where its exhibition was quickly followed by an attack of glaucoma, we have not in any case noted any tendency on its part to cause increased tension. It is not conceivable, however, that any drug which dilates the pupil can be entirely free from such tendency. As several observers have reported unpleasant and even alarming symptoms after using scopolamin for cycloplegia, it may be of interest to note just how it is used by us. The strength of the solution employed is 1 grain to the ounce—1/5 of 1 per cent. solution—this being sufficiently strong for all purposes. We experimented with weaker solutions, but did not find the results uniform. This solution should be reasonably fresh, as it seems to deteriorate when exposed frequently to the air. We get an ounce of the solution at a time, which lasts several weeks, but we take from this bottle, into another smaller bottle, sufficient for a few days, and the larger bottle is opened but once in three or four days. The dropper used has a small tip so that it gives off a minute drop. One of these small drops is instilled into each eye, the punctum being everted for a few seconds to promote absorption and to prevent washing into the nose with the tears. While still standing before the patient, another drop is usually instilled into each eye,

when the patient is allowed to go at his pleasure, returning any time after one hour.

As to certainty, we have come to regard scopolamin, used in this way, as producing as certain and complete cycloplegia in one hour as will atropin used two days. We have had a few cases where cycloplegia was incomplete when using weaker solutions, and a few also when the solution was old, on two occasions, several occurring about the same time from such solutions. But with a fresh solution of 1/5 of 1 per cent. strength, I do not think we have had more than three or four failures in all these years, and in those further use of the drug completed the cycloplegia. It is well known that in certain cases atropin must be continued longer than two days to completely paralyze the accommodation. It is much more certain than homatropia which, while usually reliable, will fail to produce complete relaxation in from 2 to 4 per cent. of all cases.

As to convenience, nothing could be more simple for the ophthalmologist than this single instillation, and it is also a great convenience to be able to make a preliminary examination and then one hour later to complete the examination with full paralysis of accommodation. To the patient also the assurance that the eyes can be used again in two or three days, instead of being at rest for a week or two, as with atropin, is frequently a determining factor in allowing cycloplegia to be induced. The effect of scopolamin will always have passed by the third day, frequently by the second, and rarely on the next day the patient can read again.

The cost of cycloplegia with scopolamin is insignificant, one grain costing about 35 cents, and being sufficient for two or three hundred patients.

DR. A. R. BAKER, Cleveland, Ohio—Since our worthy Chairman first introduced the use of ophthalmic discs, I have had no trouble with poisoning or unreliable drugs, and we are very much indebted to him for this addition to our armamentarium.

DR. C. M. CULVER, Albany, N. Y.—I have not had any toxic effects from homatropin. That may be partly due to the fact that I follow Dr. Risley's suggestion, made five years ago, that any person using a cycloplegic should press the finger on the canaliculi to prevent or to lessen general absorption. I do not see why we need a compromise. If homatropin will do the work, and the patient can return to his duties within forty-eight hours, there is no necessity for a compromise.

CONTRIBUTIONS OF THE MEDICAL PROFESSION TO GENERAL LITERATURE AND COLLATERAL SCIENCES.*

BY GEORGE R. HIGHSMITH, M.D.

CARROLLTON, MO.

(Concluded from p. 280.)

Coming down to this day and generation, we have marked wealth of material.

Oliver Wendell Holmes was beyond a doubt the foremost contributor to literature and science from the ranks of the medical profession, during the past fifty years. He combined high scientific attainment with the greatest versatility and the rarest literary genius. He was equally at home among the dry bones of anatomy, within the glow of the crucible, or amid the revelations of the microscope; as a biographer, romancer, novelist, philosopher and poet, he takes high rank. Dr. Holmes' works are known and read of all men, consequently further reference is unnecessary.

Thomas Henry Huxley, 1825-1895, graduated from the medical school at Charing Cross Hospital in 1845, was appointed assistant-surgeon on H. M. ship *Victory;* then assistant-surgeon on the ship *Rattlesnake.* In 1851 he was elected a Fellow of the Royal Society. In 1860 he began his lectures on the "Relation of Man to the Lower Animals," in which he adopted Darwin's theory of evolution. He is too well known to require an extended notice.

Sir John Kirk, born in 1833, received his degree of M.D. from the University of Edinburgh, served on the civil medical staff during the Crimean War, and was medical officer and naturalist for the second expedition of Dr. Livingstone. Dr. Kirk wrote a "Report of Geological Discoveries in East Africa," and was knighted in 1881.

Samuel Kneeland, born in 1821, practiced until the beginning of the Civil War, then served as surgeon in the U. S. Army until 1865. In 1866 he was made professor of zoölogy in the Massachusetts Institute of Technology. Dr. Kneeland wrote "An American in Iceland," and "Wonders of the Yosemite."

Joseph Leconte, born in 1823, graduated from the College of Physicians, in New York, in 1845. He practiced medicine in Macon, Ga., until 1850, when he went to Cambridge and studied under Agassiz. Since 1859 he has been professor of natural history in the University of California. His works are "Mutual Relations of Science and Religion," "Sight," "Elements of Geology," "The Agency of the Gulf Stream in the Formation of the Peninsula of Florida," "The Correlation of Vital with Chemical and Physical Forces," "The Great Lava Floods of the Northwest," "Structure and Age of the Cascade Mountains," etc.

Joseph Leidy, 1823-1891, graduated at the University of Pennsylvania in 1844. He practiced medicine and taught anatomy, serving through the Civil War as an army surgeon. In 1871 he became professor of natural history in Swartmouth College. Dr. Leidy wrote more than a hundred papers on biology and kindred subjects.

Henry Morley, 1822-1894, graduated at King's College, London. In 1844, he located at Madley, Shropshire, where he practiced until 1848. He is the author of two volumes of "Fairy Tales," and "English Writers before Chaucer," etc.

John S. Newberry, 1822-1892, graduated at Cleveland (Ohio) Medical College, in 1848. He practiced medicine in Cleveland until 1855, when he was appointed assistant-surgeon to the U. S. Survey of Northern California. During the Civil War he was connected with the U. S. Sanitary Commission. After the war he became professor of geology in Columbia College, New York City. In 1869 he was appointed state geologist of Ohio. He contributed many papers on natural history and geology, the most of which are to be found among government reports and reports of New Jersey and Ohio.

Robert G. Latham, 1812-1888, studied medicine and became assistant physician at Middlesex Hospital. He lectured on forensic medicine and materia medica. His works are "Norway and Norwegians," "Varieties of Man," "The English Language," "Nationalities of Europe," "A New Edition of Johnson's Dictionary," and "Russian and Turk from a Geographical, Ethnological and Historic Point of View."

Herman August Hagen, 1817-1893, graduated in medicine in Koenigsberg, and practiced medicine for several years in his native land. In 1867 he came to Cambridge as assistant to Professor Agassiz. In 1870 he was made professor of entomology at Harvard. He is the author of several works on entomology.

Herman Helmholtz, 1821-1894, graduated in medicine at Berlin and was attached to one of the hospitals. He afterward served as surgeon in the German army. Among his works are "Preservation of Force," "Theory of Impression of Sound," "Sensation of Tone as a Physiological Basis for the Theory of Music" and "Popular Lectures on Scientific Subjects."

Sir Joseph Dalton Hooker, 1817-1892, was assistant-

surgeon to the expedition of Sir James Ross, fitted out by the English government to investigate terrestrial magnetism in the circumpolar seas. As a result of his researches during this voyage he published several volumes on "The Botany of the Auckland Island, New Zealand and Tasmania." In 1847 he went to India to investigate the plants of tropical countries. In 1851 he published the result of this expedition in two interesting volumes on "The Botany of India." In 1868 he delivered several popular addresses indorsing the Darwin theory of evolution. In 1877 he was created "Knight Commander of the Star of India." In that year he visited the United States and was cordially received by scientific circles in this country.

Benjamin Franklin Hough, 1822-1885, practiced medicine for many years in Sommerville and Albany, N. Y. In 1862 he entered the U. S. Army, as surgeon. At the close of the Civil War he was attached to the forestry division of the U. S. Department of Agriculture. The most of his literary work is found in reports of this Department, the most important being "The Influence of Forests on Climate and Rain-fall."

John Percy, 1817-1889, was a pupil of Sir Charles Bell. He practiced medicine for several years at Birmingham, England. In 1851 he was appointed professor of metallurgy in the Royal School of Mines. He is the author of "The Art of Extracting Metals from their Ores, and Adapting them to the Various Purposes of Manufacture." In 1877 he received the "Bessemer Medal" for his works on iron and steel.

Sir Benjamin Richardson, 1829-189 , received several gold medals for essays on medical subjects. He is the author of a novel, besides other contributions to general literature. He was knighted in 1893.

Samuel Smiles was born in 1813, at Haddington, Scotland, and practiced medicine in his native town for several years. He retired from practice to become editor of the *Leeds Times*. "Self Help," by Samuel Smiles, is well known. He has been a frequent contributor to the *Quarterly Review*.

John Aston Warder, 1812-1883, graduated at Jefferson Medical College, Philadelphia, in 1836. He located at Cincinnati, Ohio, in 1837, and practiced his profession until 1855, when his literary work compelled him to give up his practice. He gave much attention to educational matters; he was a member of the Board of Education of Cincinnati, and served on the State Board of Agriculture, and did much to develop an interest in landscape gardening. From 1850 to 1854 he published *The Western Horticultural Review*, and after that, for several years, *The Botanic and Horticultural Review*. He contributed extensively to periodicals, and published several works pertaining to medical, agricultural and horticultural sciences. In 1873 he prepared the official report for the United States Government, on "Forest and Forestry," for the "World's Fair" at Vienna.

George Engelman, 1809-1884, was born at Frankfurt-on-the-Main, and died in St. Louis, Mo., in 1884. Many members of this Association enjoyed his personal acquaintance. He entered the Univerity of Heidelberg, in 1827, and pursued his studies there for one year. He then went to Berlin, where he stayed two years; then to the University of Wurzburg, where he took the degree of Doctor of Medicine in 1831. His inaugural dissertation for the medical degree related to philosophic botany, mainly to the structure of monstrosities and aberrant forms of plants. Although produced so early in his career, it is still held to be one of the most philosophic works of its kind. It was published in 1832, under the title of "Antholysi Prodomus," and was much admired by the poet-philosopher, Goethe. The spring and summer of 1832 was spent in Paris, where he had Braun and Agassiz for companions. According to Engelman's statement, in reference to the time, they "led a glorious life in scientific union." In the winter of 1832 he came to America, and for three years was engaged in looking after some business interests for some relatives in Germany. In 1835 he established himself in the practice of medicine in St. Louis. In 1840 he formed the acquaintance of Dr. Asa Gray, then the most distinguished botanist in the United States, and a friendship was begun which was only broken by death. Dr. Engelman was successful both professionally and financially, as a physician, and during his latter days he was able to examine the living floras of the mountain regions of North Carolina and Tennessee, the Lake Superior region, the Rocky Mountain region and the adjacent plain, and the Pacific Coast. He was one of the principal movers in the inauguration of the National Academy of Science, his name appearing first on the roll. He was the originator of the movement to form the St. Louis Academy of Science, and naturally became its first president. The membership showed their appreciation of his scientific work by electing him president no less than sixteen times, the last but a few months before his death. In 1887, his published works were collected and published in one quarto volume of 508 pages, and 103 full-page plates, with the title, "Botanical Works of George Engleman, Edited by Wm. Trelease and Asa Gray." Dr. Engleman's associates, and also his published writings, testify to his acuteness in observation, indomitable perseverance in investigation, his critical judgment, and a rare openness of mind, which prompted him to continually revise his old conclusions in the light of new facts or ideas. As a physician, Dr. Engelman had a large patronage, and was a very busy practitioner almost to the end of his life, yet he accomplished more in the field of botany during his leisure moments and occasional vacations than many who have devoted the whole of their lives to the work.

Jose Rizal, who died in 1896, a physician, scholar, novelist and poet, was born in Manila, P. I., of native parents, graduated at the University of Madrid as Doctor of Medicine and Philosophy, and afterward studied in Paris, Heidelberg, Leipsic and Berlin. He then returned to Manila, where he published a novel which dealt so severely with the corruption of the church on the Islands that he was banished by the Spanish government. After visiting the United States, Rizal went to London, where he devoted himself to further study and published another novel. He then practiced in Hongkong for some time, and finally went to Borneo, intending to found a colony of Filipinos. Returning to Manila to recruit for his colony, he was seized and imprisoned on the Island of Dapitan. After he had been four years on the island, all the time under surveillance of his Spanish guards, another insurrection broke out in the Philippines. He was taken to Manila, charged with inciting the uprising and condemned to be shot. Many humane Spaniards and Spanish newspapers protested against the shooting of Rizal. One hour before his death he married his betrothed, a beautiful Irish girl. As an illustration of the refinement of Spanish cruelty, his own countrymen were compelled to do the shooting. Back of the row of Filipinos stood Spanish soldiers ready to cut them down if they faltered in their cruel work. "Never," said an eye-witness, "never shall I forget that awful morning, nor the horror-thrill that came with the report of the cracking rifles, as his man-

gled body fell on the public promenade, amid the jeers of Spaniards and monks." The day before his death Rizal wrote a poem which was his dying message to his native land, one stanza of which I quote:

Farewell, adored Fatherland; our Eden lost;
Farewell, O sun-adored region; Pearl of the Eastern sea;
Gladly I die for thy dear sake. Yea, thou knowest well
Were my sad life more radiant far than mortal tongue could tell,
Yet would I give it gladly, joyously for thee.

In France and Germany he lived among the peasants for months at a time, for the purpose of studying their characteristics. He came to the conclusion, at last, that all the human races are different in their outward habits and their build, but not in their psychology. White, brown, yellow and black feel and are controlled by the same passions and emotions. He repudiated the doctrine that there are races of limited capabilities, that can never rise to the level of the Europeans. His execution was on Dec. 30, 1896.

I have refrained so far from referring to those who have been educated for physicians and taken a degree in medicine, but have never engaged in active practice for any great length of time, yet have gained reputation in other pursuits, especially in literature and science. Among these I mention Tobias Smollett, George Crabbe, John Locke, Oliver Goldsmith, J. G. Holland, Ernst Haeckel, Hayden, John Keats, Asa Gray, and others too numerous to mention.

Among those who are now living and active contributors, I may mention A. Conan Doyle and S. Weir Mitchell; their names have not yet passed into history, but their fame is secure.

The medical profession has not only gained a conspicuous place in literature and science by original work and investigation, but has won such a place in general esteem as to attract the admiration of the professional literati. Some of the most lovely and lovable characters introduced into recent fiction are physicians, viz., Dr. Lydgate in "Middlemarch," Dr. Jekyll in "Dr. Jekyll and Mr. Hyde," and Dr. MacLure in "Beside the Bonnie Briar Bush."

Besides filling no inconsiderable niche in general literature, the fields of mental and moral sciences, chemistry, botany, zoölogy, physiology and natural history have been especially enriched by contributions from physicians. The facts on which Darwin's theory of evolution is based would be very meager indeed without the contributions furnished by the medical profession. That poetry and the natural sciences should be especially attractive is not to be wondered at, when we remember that the physician's professional work brings him face to face with Nature. The physician who has been engaged in the practice of medicine for several years, especially in the country, who does not love blue skies, green fields and running brooks, gorgeous sunsets, mellow twilights and fair dawns; the song of birds, the hum of bees and the prattle of children; who is not able to appreciate Nature in all her moods, and as the poet expresses it, find "songs in trees, sermons in stones, books in running brooks, and good in everything," has lived but to little purpose.

Cocain in Herpes Zoster.

Bleuler writes to the *Neurol. Cbl.* of Nov. 15, 1899, that he has treated and cured 23 cases of herpes zoster with a 1 per cent. salve of cocain in equal parts lanolin and vaselin. The pain and spread of the disease are arrested at once, and the cure is complete in eight to ten days.

Clinical Report.

FOREIGN BODY IN URETHRA.

BY L. M. GREENE, M.D.
BETHEL, VT.

On Aug. 3, 1898, I was called to a neighboring town to operate on a man, 43 years of age, suffering from a foreign body in the urethra. Nine days previously, while manipulating the inside of his penis with a lead pencil, it escaped into the urethra. After five days, being unable to urinate, and suffering severely from pain, his physician was called, and attempted to pass a catheter, which was arrested at the proximal extremity of the pendulous urethra. I found an enormously swollen scrotum, with extensive extravasation of urine throughout the perineal and pubic regions, extending to Poupart's ligament. There was a constant dribbling of urine from the penis, none having been passed naturally during the nine days. The man was suffering extremely, temperature 103, pulse 120. With the assistance of the attending physician, Dr. F. E. Steele, and Drs. C. C. Smith and O. D. Greene, under ether and in the lithotomy position, an incision was made from one inch anterior to the anus well into the median raphe of the scrotum. A large quantity of offensive-smelling, decomposed urine, pus and blood followed the knife. The point of the pencil was found two inches anterior to the anus. It was a large-sized lead pencil with a metallic head; 6½ inches in length. It had been introduced head first, passing the length of the pendulous urethra where it ulcerated through into the ischiorectal fossa of the left side.

A large metallic catheter was then passed into the bladder through the penis, and a quart or more of decomposing offensive urine removed. The bladder and wound were thoroughly irrigated with bichlorid solution, 1 to 4000, the metallic catheter changed for a gutta-percha one, and the lacerated, ulcerated urethra trimmed and sutured over it with chromicised catgut. After-treatment consisted of a daily washing of the wound and bladder, and packing of the wound with iodoform gauze. The wound was left open throughout its extent. After two weeks the catheter was removed from the bladder and a soft rubber one introduced daily, for irrigation. At this time the urine mostly passed naturally, only a slight leakage occurring in the wound. At the end of eight weeks the perineal and scrotal wound had healed. A metallic sound, No. 26 French, was passed daily. No urine escaped through the perineal wound after the end of six weeks. A sound was passed for three months, from once a week to once in two and three weeks. At the present time the man is in perfect health, with his habit of masturbation probably cured.

Therapeutic Application of Clabbered Milk.

The *Archives Orientales*, December, 1899, contains a communication from Dr. Paschayan describing the fine results obtained in gastro-intestinal affections by the exclusive use of sour milk. The Kurds give it exclusively in acute enteritis, curing the patient in three or four days without other medication, and our Turkish confrère has been using it since 1888 with remarkable success in many cases. One young man affected with "putrid dyspepsia" for over a year had consulted numerous physicians and tried all kinds of food and medication, but was unable to digest or retain anything on his stomach. "Instructed to eat nothing but clabber, his vomiting ceased from the first day and he rapidly recovered, until by the end of two months he could eat and digest apparently normally." Paschayan also gives it as a drink to typhoid patients.

Therapeutics.

Treatment of Diphtheria.

Dr. H. B. Sheffield, in the *N. Y. Med. Jour.*, says *Merck's Archives*, recommends the following procedure in the treatment of this disease:

1. Endeavor to subdue the hyperemia and excessive exudation in the throat in order to avoid respiratory obstruction.

2. Destroy at the earliest moment the diphtheria bacilli at the point of entrance in order to prevent the excessive formation and immediate absorption of the diphtheria toxin.

3. Increase the power of resistance of the patient, and administer such remedies as will combat or neutralize the toxic substances, thus preventing their dissemination in the internal organs of the body.

4. Promote the action of the lymphatic system, kidneys and bowels in order to eliminate rapidly the poisonous products.

In following Nos. 1 and 2, germicides must be used, but care must be exercised that they do not act simultaneously as active escharotics. The author applies to the throats of his patients, by means of a cotton swab, a combination of carbolic acid and camphor dissolved in alcohol and glycerin, together with papain as a solvent for the membrane. Eight grains each of the carbolic acid and camphor are used in a two-ounce solution. The throat is painted with this every two hours and a new swab used every time. For the nose the author uses the following:

℞. Hydrogen peroxid.....3iv
Sodii boratis.....3ii
Glycerini.....3ii
Aquæ rosæ, q. s., ft.....3iv

M. Sig. One tablespoonful to be instilled into the nose every two hours in the presence of diphtheritic membranes in the nares, and every four hours in their absence.

The third and fourth indications must be met with good nourishment, iron preparations, nerve and heart stimulants, diuretics, and laxatives. In giving stimulants he never waits for cardiac debility to set in, but always anticipates its possibility from the very start. Where food can not be administered by the mouth, nutrient enemata should be resorted to. The author is in the habit of prescribing the following:

℞. Tinct. ferri chloridi
Tinct. myrrhæ, āā.....3ii
Glycerini.....3ii
Syrupi zingib, q. s., ad.....3iii

M. Sig. One teaspoonful to be given every three hours to a child 3 years old.

℞. Strychninæ sulph.....gr. 1/4
Liq. ferri et ammon. acet.....3iii

M. Sig. One teaspoonful to be given every six hours to a child 3 years old.

The author rarely uses antipyretics, but finds that small doses of any of the stimulating synthetic products answer well to reduce temperature and relieve pain. A laxative administered once a day is useful. In marked irritability of the child, sodium bromid, combined at times with a small dose of chloral, is very serviceable.

In laryngeal diphtheria, if any deposit is visible along the fauces, he uses the first mixture given and he always orders cleansing the nose with the second. In severe cases intubation should be practiced, to avoid resorting to tracheotomy. The internal remedies enumerated are of undoubted value in this form. After intubation no liquids must be given by the mouth; strychnin should be administered hypodermically.

For the reduction of the swelling of the submaxillary glands, iodin ointment—10 per cent. of ichthyol—is an excellent remedy. The author now uses antitoxin in all cases of laryngeal diphtheria, stating that he has had good results from its use in combination with the other treatment, but is not prepared to say how much of the benefit is due to the antitoxin and how much to the other remedies.

Treatment of a Cold.

Max Nassauer, writing in the *Cincinnati Lancet-Clinic*, aborts an incipient cold, i. e., when sneezing, tickling, and increased secretion announce the onset of an attack, by thoroughly irrigating each nostril with a weak—pale pink—solution of potassium permanganate, the fluid being allowed to run through the other nostril and the mouth. Each nostril is then wiped out with cotton on the finger. A small dry plug of cotton is then pushed well up into each nostril, and the nostrils are filled with the weak solution, the cotton being allowed to absorb it. The plug is left for an hour, when it can be expelled by blowing the nose. While agreeing with Dr. Nassauer that the permanganate irrigation may exert a specific action on the germs of coryza, the filling of the nostrils with cotton soaked in the solution appears to us objectionable, since it certainly must irritate an already inflamed mucous membrane, and also because the permanganate having expended its oxidizing powers on the cotton—organic matter—would be practically without germicidal action.

Dr. A. S. Barnes, in an article in the *Interstate Medical Journal*, gives the following method to cure a cold quickly: He produces profuse sweating by a tub bath as hot as can be borne for five minutes, then rolling the patient in a warmed blanket, putting him to bed and heaping on covers. He also gives ⅛ gr. pilocarpin hydrochlorate in half a glass of warm water—less pilocarpin if the patient is weak and thin. After three-quarters of an hour's sweating give 1/100 gr. atropin in water. Fifteen minutes after this, mop—do not use friction—with warm towels. Then place on him a warmed nightrobe, put him between warmed sheets with his ordinary covering over him, and give the following prescription:

℞. Phenacetin.....gr. xviii
Salol.....gr. xxxvi
Caffeinæ citratis.....gr. iv

M. Ft. in caps. No. xii Sig. One every two hours.

Be sure to tell the patient that dribbling from the mouth is caused by the medicine and will soon disappear. It is claimed that this method will cure a cold more quickly than any other.

Treatment of Hemorrhoids.

We quote from the Paris letter by Dr. A. R. Turner, in the *Therapeutic Gazette*, the following:

When excoriations exist on hemorrhoids, or when there is slight loss of blood, suppositories can be administered:

℞. Chrysarobin.....08
Iodoform.....02
Ext. of belladonna.....01
Cacao butter.....2

M. For one suppository. Sig. Two or three daily.

The following ointment may also be used:

℞. Chrysarobin.....8
Iodoform.....3
Ext. of belladonna.....6
Vaselin.....10

M. Sig. Use locally several times a day.

When small tumors exist, local applications of the following solution are very useful:

℞. Iodid of potassium.....2
Iodin.....2
Glycerin.....35

In case of hemorrhage, no preparation seems better than hamamelis virginica, a teaspoonful of the fluid extract thrice daily in a half tumblerful of water.

Administration of Bromoform.

Wilbur L. Scoville suggests the following formula for administering bromoform:

℞. Bromoformi.....3ss
Tinct. tolutanæ.....3i
Mucilaginis acaciæ.....3ii
Syrupi.....3iv
Aquæ menthæ viridis, q. s., ad.....3ii

M. Ft. emulsion.

Each teaspoonful contains m. ii of bromoform. The quantity of bromoform may be varied at will. The mixture is to be shaken before taking.

Advantages claimed: Minimum amount of alcohol, accurate dosage, other medicaments may be added, very palatable.—*Pediatrics*, January 15.

A Local Aphrodisiac.

J. Coplin Stinson, of San Francisco, writing in the *N. Y. Med. Jour.*, recommends echinacea angustifolia as a local aphrodisiac. He uses Lloyd's echinacea, s. t., applied freely to the glans penis and corona, using from 20 to 60 drops. He claims that it immediately produces a mild, pleasantly tingling, penetrating

burning sensation, and that in from 2 to 15 minutes erection occurs. He also states that the interval between erections is shortened. All forms of impotence, functional as well as organic, can be benefited; but he advises, of course, treating the primary cause at the same time. If these claims bear the test of practical experience, echinacea is bound to become a popular drug.

Treatment of Scorpion Bite.

Readers of THE JOURNAL in the tropics may be interested in the treatment advocated by F. J. Romero, in the *Cronica Med. Mexicana* of January 1, with which he has been successful in all but 3 out of 19 cases. The intoxication was very severe in 49. He first examines the spot bitten and seeks the exact point where the poison entered, by testing the skin with a quill toothpick until he locates the least sensitive point, which he then examines with a magnifying glass: a livid spot surrounded by a darker zone. Here he makes an incision and applies a cupping glass, withdrawing a few grams of blood, then cleanses and cauterizes the spot and applies a ligature between it and the heart when possible. He prescribes the following:

R.	Canellæ et jaborandi infus.	3xxx	120
	Tinct. iodini	gtt. xx	1
	Potassii iodidi	gr. xv	1
	Ammonii acetatis	3iss	6
	Ext. guaco	gr. xv	1
	Syrupus simplicis	3iv	15

M. Sig. A tablespoonful every twenty minutes. For children under 6 years a half teaspoonful.

The warmth of the body must be kept up and the extremities frictioned, with inhalations of ether or chloroform. In case the trismus renders it impossible to admisister the medicine per os, he administers it diluted in small enemata. As the patient recovers the intervals between the doses are lengthened.

Strontium Bromid in Epilepsy.

J. V. Laborde announces that, with all the advantages of potassium bromid, a similar elective action on the excito-motor cells, and the same therapeutic and physiologic activity, strontium bromid is a substance far better tolerated by the organism than any other bromid, and the dose can be rapidly increased to the effective amount without inconvenience of any kind and will conquer epileptic seizures of functional origin and nature, no matter how inveterate or frequent. It can be substituted for the maximum dose of potassium bromid from the start, and thus easily and rapidly arrest the seizures and terminate the manifestations of the disease. He commences with 4 gm., increasing progressively to 10 or 12, fractioned by 2 to 4 gm. for the adult. The effective dose for a child is 2, 6, or 8 gm.. He states (*Bull. de l'Acad. de Méd.*, Dec. 5, 1899) that he has an experience of five cases permanently cured and tested by time, and many others in which he arrested in a week an epilepsy with eighteen to twenty seizures a day.

Chloral Hydrate in Nervous Dyspepsia.

This drug is highly recommended by Rosenbach as a gastric sedative in this disease, says *Merck's Archives*. In all instances where there was no actual organic disease, the drug proved most effectual in relieving the many gastric symptoms of which neurotic individuals are prone to complain. Especially was this true of the headache, dyspepsia, flatus, cardiac palpitation and oppressive sensation of fulness coming on immediately after eating, and also of the still more trying manifestations several hours after meals, particularly if mental or physical exertion intervened, in which, in addition to the more strictly localized symptoms, there are added great fatigue combined with obstinate insomnia. In such cases chloral hydrate may be administered in doses of from 1½ to 3 grains, well diluted, and given from one to two hours after meals, to be repeated or increased if needed. The same amounts given two or three times a day were found effectual in replacing the bromids in a great variety of disorders of neuropathic etiology.

Glutol As an Antiseptic.

Dr. Augustin Henry concludes an interesting paper, in the *Therap. Monatsh.*, on his observations as follows:

1. In the presence of living tissues, glutol, by its gradual decomposition, yields a continuous supply of formaldehyde, thus possessing the antiseptic properties of this agent.

2. It is odorless, non-toxic and non-caustic, producing neither the inflammatory nor other undesirable symptoms attending the application of formalin in solution.

3. In the dressing of wounds, suppurating areas, and burns, it is superior to antiseptics such as salol, bismuth subnitrate, and iodoform.

4. Its use presents especial advantages in instances where the irritating and toxic properties of other substances make a harmless antiseptic desirable.

5. Where the tissues are necrotic, the action of glutol may be increased by the additional application of a hydrochloric acid pepsin solution.

Palatable Castor-Oil.

The following useful formula is published in *Merck's Report*:

R.	Saccharin	gr. xii
	Olei gaultheriæ (or menthæ pip)	m. xx
	Alcohol	3iv
	Olei ricini	Oi

The addition of saccharin, aromatic oil, and alcohol has been used by us in making cod-liver-oil palatable and is very successful.

Sodium Sozoiodolate in Soft Chancre.

Grivzoff *(Berl. Klin. Woch.; Brit. Med. Jour.)* rejects dermatol and xeroform in the treatment of soft sore. On the other hand, he prefers europhen to iodoform, believing that the former is a more active specific. But he finds the sodium sozoiodolate, already much used in washing out the bladder, a better specific even than europhen. It is quite free from smell, and is not poisonous. At first it should be mixed with some inert powder, as it is apt to cause a smart burning pain when applied, but after a few days the affected part grows less sensitive, and the pure preparation may be freely applied.

Spermin in Neurasthenia.

Max Salomon, of Berlin, reported, in the *Berl. Klin. Woch.*, two severe cases of neurasthenia occurring in women aged 48 and 54 years respectively, who, having been unsuccessfully treated by various nerve tonics, and other remedial measures, were promptly cured by spermin. The drug was administered hypodermically, the injections being made at first daily in the back, near the spinal column, and as the symptoms improved and the patients gained in strength, every other day, or even less frequently. For the injections a 2 per cent. sterilized solution was used in doses of 1 c.c.

For Chaps, Etc.

The *Jour. de Méd. de Paris* for Dec. 3, 1899, attributes the following to Vigier:

R.	Tannic acid	gr. viiss
	Glycerin at 30	3v
	Hydrolate of roses	3xxv

M. Dissolve. The hands are to be rubbed morning and evening with a few drops of this solution to render the skin supple and disperse the chaps. It is useful for chapped lips.

Intractable Aphthae.

The following formula appears in the *Louisville Medical Monthly*:

R.	Acidi salicylici	gr. xxx
	Alcohol	m. cxxx
	Glycerini, q. s., ad	3i

M.

Treatment of Syphilis.

A new combination for hypodermatic injection in syphilis is the following:

R.	Hydrarg. chlor. mit.	gr. lxviiss
	Orthoform	gr. xii
	Ol. petrolat	3iiss

M. Sig. 15 to 30 drops can be injected; securing the analgesic effect of the orthoform.—*Loza.*

A Prescription for Gravel.

R.	Sodii bicarbonatis	3iss
	Acidi benzoici	gr. xxx
	Sodii phosphatis	3ii
	Aquæ bullientes	3iv
	Dissolve, filter and add aquæ cinnamomi	3vi

M. Sig. Two tablespoonfuls of this mixture may be given three times a day in cases of uric acid gravel.—*Jour. des Praticiens.*

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Philadelphia Medical Journal, January 27.

1.— Selections from the Lane Lectures: Cardiac Physics. Thomas Clifford Allbutt.
2.—*Case of Multilocular Pseudomucinous Cystadenoma of Right Ovary, Associated with Pronounced Symptoms of Diabetes, Operation with Recovery, Followed by Disappearance of Sugar from Urine and Diabetic Symptoms. Henry D. Beyea.
3.—*Athetosis and Kindred Affections. Frank Fischer.
4.—*Medical Societies in this Country Founded Prior to the Year 1787. Francis R. Packard.
5.—*Diet as a Method of Diagnosis. C. D. Spivak.
6.— New Staining Forceps. F. J. Kalteyer.

Medical News (N. Y.), January 27.

7.—*Pruritus Ani. J. P. Tuttle.
8.—*The Great Drainage Canal at Chicago. J. A. Stewart.
9.— Experimental Researches on Effects of Increased Barometric Pressure and Foreign Bodies in the Pharynx, Esophagus, Trachea and Larynx. Geo. W. Crile.

New York Medical Journal, January 27.

10.—*Flexion or Bent-Knee Marching. E. H. Bradford.
11.—*Remarks on Intranasal Operations. Walter F. Chappell.
12.— Study of Inhibition. J. Y. Gonzalez.
13.—*Antitoxin Results and Diphtheria Definitions. A. Rupp.
14.—*Pony, Montana, as a Resort for Cases of Pulmonary Tuberculosis. John C. Schapps.
15.—*Staphylitis and Elongated Uvula. Theron W. Kilmer.
16.— Clinical Memoranda on Otitis Media Suppurativa Chronica. John F. Oaks.
17.—*Treatment for Acute Serous Synovitis Permitting of Joint Functions. Phil. Hoffmann.

Medical Record (N. Y.), January 27.

18.—*Leprosy in Hawaii. E. S. Goodhue.
19.—*Sanatorium Treatment at Home for Patients Suffering from Tuberculosis. S. A. Knopf.
20.—*Criticism on a New Method of Preparing the Skin for Vaccination by Denudation with Caustic Potash Solution. Frank S. Fielder.

Boston Medical and Surgical Journal, January 25.

21.—*A Rhode Island Philosopher—Elisha Bartlett. (*Concluded.*) William Osler.
22.—*Sixteen Years' Experience in Food and Drug Inspection. Samuel W. Abbott.
23.—*Value of X-Ray Examinations in the Less Frequent Diseases of the Chest, Illustrated by Their Use in Those Cases Where the Aneurysm is Present or Suspected. (*Concluded.*) Francis H. Williams.
24.—*Sterilizer and Equipment for Confinement Cases. Frank A. Higgins.
25.—*High Operation for Disease Within the Scrotum. J. G. Mumford.
26.— Case of Ptomain Poisoning. W. P. Coues.

Medical Review (St. Louis, Mo.), January 27.

27.— Some Remarks on the Report of the St. Louis Insane Asylum for 1897-98. Edward C. Runge.

Cincinnati Lancet-Clinic, January 27.

28.— Arabic Medicine. J. S. Tunison.
29.— Disease of Rectum and Anus. Geo. J. Monroe.

Northwestern Lancet (St. Paul, Minn.), January 15.

30.— Empyema. E. J. Abbott.
31.— Nature and Treatment of Acute Infections of Genital Tract in Women. J. L. Rothrock.
32.— Medical Legislation. T. J. Reid.
33.— Echinococcus Cysts of Liver. F. H. Odendahl.
34.— New Preparation for Treating Lithemia. G. C. Barton.

Medical Fortnightly (St. Louis, Mo.), January 15.

35.— Prophylaxis of Typhoid Fever. J. H. Miller.
36.—*Some Interesting Cases of Acquired Syphilis of the Nose and Throat. Wm. D. H. Brown.
37.—*Physiology. A. L. Benedict.

Virginia Medical Semi-Monthly (Richmond), January 12.

38.— Treatment of Club-foot with Report of Six Cases. A. R. Shands.
39.— Case of Epithelioma of Tongue. Llewellyn Eliot.
40.—*Gastrostomy for Traumatic Stricture of Esophagus: Report of Case. George Ben Johnston.
41.— Remarks on Ovarian Tumor with Twisted Pedicle, with Report of Eight Cases. Maurice H. Richardson.

Railway Surgeon (Chicago), January 23.

42.— Principles vs. Methods in Railway Surgery. A. I. Bouffleur.
43.— Report of Case of Compound Dislocation of Elbow, with Compound Fracture of Radius. W. E. Vest.
44.— Compound Fractures. A. O. Williams.

American Practitioner and News (Louisville, Ky.), Dec. 15, 1899.

45.— Hygiene of the Nose. W. Cheatham.
46.— Gall-Stones in the Common Duct: Their Diagnosis and Treatment. F. Warren Samuel.
47.—*Guaiacol in Treatment of Malaria; with a Presentation of Four Cases. Charles J. Whalen.

Medical Age (Detroit, Mich.), January 10.

48.— Visit to the Sabathu Leper Asylum. N. S. Rudolf.
49.— Poliomyelitis Anterior Acuta. Charles Mason.
50.— Errors of Refraction and Blepharitis Marginalis. William Cheatham.
51.— Vital Statistics and Health Laws. A. F. Fuchs.

Bulletin of the Johns Hopkins Hospital (Baltimore), December, 1899.

52.—*Recognition of the Poisonous Serpents of North America. Howard A. Kelly.
53.— Chemistry, Toxicology and Therapy of Snake-Poisoning. Thomas R. Brown.

Annals of Surgery (Philadelphia), January.

54.—*Employment of Local Anesthesia in Radical Cure of Certain Cases of Hernia, with a Note on the Nervous Anatomy of the Inguinal Region. Harvey Cushing.
55.—*Interscapulo-Thoracic Amputation. Russell S. Fowler.
56.—*Note on Mortality after Operation for Large Incarcerated Hernia. Henry Orlando Marcy.
57.— Surgical Aspects of Modern Small-Bore Projectiles. August Schachner.
58.— Mammoth Ovarian Tumors. James B. Bullitt.
59.— Vesico-Urethro-Vaginal Fistula. J. Shelton Horsley.

Journal of Nervous and Mental Disease (N. Y.), January.

60.—*Progressive Ankylotic Rigidity of the Spine. B. Sachs and J. Fraenkel.
61.—*Meralgia Paresthetica (Roth), with Report of Ten Cases. J. H. Musser and Joseph Sailer.
62.— Unity of the Acute Psychoses. Philip Coomes Knapp.
63.— Two Cases of Muscular Dystrophy with Necropsy. Wm. G. Spiller.

American Journal of Obstetrics (N. Y.), January.

64.—*Relation of Insanity to Pelvic and Other Lesions. A. T. Hobbs.
65.—*New Operation for Persistent Inversion of Uterus. Barton Cooke Hirst.
66.—*Frequency and Mortality of Abnormal Pelves. Edward P. Davis.
67.—*Cystic Distension of Appendix Vermiformis with a Review of the Literature of the Subject. James C. Wood.
68.— Case of Twisted Ovarian Cyst. A. Lapthorn Smith.
69.— Tubular Adenoma of Rectum (Papillary Adenoma Tubulare Polyposa). John B. Shober.
70.— Labor Complicated by Contracted Pelvis, Large Fibroma of Uterus and Eclampsia. Edwin K. Ballard.
71.—*Cause and Cure of Convulsions after Labor. A. K. Bond.
72.— Three Cases of Ectopic Gestation. Henry J. Kreutzman and Lois Nelson.
73.— Ovarian Cystoma Complicating Pregnancy. William S. Stone.
74.— Obstetric and Gynecologic Treasures of the Army Medical Museum. Thomas C. Smith.

Occidental Medical Times (San Francisco), January 1.

75.— Diagnosis of Aneurysm of Aortic Arch. William Fitch Cheney.
76.— Surgical Treatment of Aneurysm of Aortic Arch. Julius Rosenstirn.
77.— Prevention and Treatment of Acute General Peritonitis. Wallace A. Briggs.
78.— Practical Points in Obstetrics. Charlotte B. Brown.

Laryngoscope (St. Louis, Mo.), January.

79.—*Appropriate Treatment of Certain Varieties of Nasal Deflections and Redundancy. D. Braden Kyle.
80.—*Therapeutic Effects of Vibratory Massage in Chronic Deafness. Professor Ostmann.
81.— Case of Mastoiditis—Cerebral Tubercle—Death—Autopsy. Burnett C. Collins.

Medical Times (Philadelphia), January.

82.— Principle of Fixation in Fracture Treatment. Edward A. Tracy.

Canadian Practitioner and Review (Toronto), January.

83.— Report of Case of Brain Tumor. R. W. Bruce Smith.
84.— Septicemia. Chas. A. Page.
85.—*Interne Service in Modern Hospitals: Comparison of the Canadian and American Systems. T. Leonard Vaux.
86.— Chemical Rays of Solar Spectrum as a Remedial Agent. Graham Chambers.

Chicago Clinic, January.

87.— Report of Case of Cerebellar Tumor; Operation; Death; Autopsy. D. A. K. Steele.
88.— Essentials of Success in Abdominal Surgery. Florus F. Lawrence.
89.— Diagnosis and Treatment of Hemorrhage into Peritoneal Cavity. A. S. Waiss.
90.— Anatomic Reflections on Pelvic Outlet. W. T. Eckley.
91.— Postpartum Hemorrhage. Gustav Kolischer.
92.— Principles Relating to Static Machine Construction. R. V. Wagner.

Merck's Archives (N. Y.), January.

93.—*Therapeutic Value of Calcium Sulphid. Samuel E. Earp.
94.—*Treatment of Acute Croupous Pneumonia. J. M. French.
95.—*Ichthalbin as a Substitute for Ichthyol. Samuel Wolfe.
96.— Specific Treatment for Typhoid Fever. C. D. Miller.

Medical Bulletin (Philadelphia), January.

97.— Some Cardiac and Gastric Diseases. J. M. Anders.
98.—*Diet in Lithemia. A. B. Conklin.

Medical and Surgical Monitor (Indianapolis, Ind.), January 15.

99.—*Some Suggestions Concerning the Microscopic Examinations of Blood Stains in Medicolegal Cases. Frank B. Wynn.
100.— Notes of European Travel. A. J. Banker.
101.— Indiana State Medical Society. F. C. Heath.

Alabama Medical and Surgical Age (Birmingham), January.

102.— State Care of Epileptics, with Demonstrations of Methods in Use at Craig Colony, Sonyea, N. Y. Wm. P. Spratling.
103.— Fracture of Skull with Hemorrhage; Operation; Recovery. W. D. Gaines.
104.— Poison Emergencies. H. P. Pressly.

Ft. Wayne Medical Journal-Magazine, December, 1899.

105.— General Remarks on Diagnosis and Treatment of Serious Eye Diseases. A. E. Bulson, Jr.

106.— Conservative Surgery of Ovary. H. A. Duemling.

American Medical Compend (Toledo, Ohio), January.

107.— Etiology and Pathology of Tuberculosis. M. H. Bowman.
108.— Prevention of Tuberculosis. W. A. Dickey.
109.— Signs and Symptoms of Pulmonary Tuberculosis. J. H. Jacobson.
110.— Prognosis and Treatment of Pulmonary Tuberculosis. John North.

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111.— Death-Rate from Nephritis in 140 Cities in the United States, for 1898. C. H. Wilkinson.
112.— Uranalysis. W. R. Neville.
113.— The Baby's First Week. H. W. Cummings.
114.— Erysipelas. M. L. Lankford.
115.— First Stage of Labor. W. C. Taylor.

Hot Springs Medical Journal, January.

116.—*Most Important Point to be Considered in Treatment of Appendicitis. A. J. Ochsner.

Journal of Scientific Medicine (Chicago), December, 1899.

117.— Intubation. Edwin Rosenthal.
118.— Occipito Posterior Positions of the Vertex in Labor. R. C. Blackmer.
119.— Reflections of General Practitioner: 1. "How We Waste Our Money." Gustavus M. Blech.
120.— Sanguiferrin in Typhoid Fever. Isaac H. Cadwallader.
121.— Value of Feeding in Acute Diseases. Milton P. Creel.

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122.—*A Modified Hartley-Krause Operation for Persistent Facial Neuralgia. J. D. Griffith.
123.— Some of the Complications, Accidents and Dangers in Connection with Fractures. Andrew L. Fulton.
124.— Septic Ulcer, Hysteria and Delirium Tremens. J. D. Griffith.

Medical Summary (Philadelphia), January.

125.— Cutaneous Diseases which Commonly Attack the Ear. J. Abbott Cantrell.
126.— Michievous Mutilation of Women. S. L. Kilmer.
127.— Report of Case of Necrotic Sore of Face. Jas. S. Cobb.
128.— Warfare against Antitoxin. J. A. DeArmand.
129.— Typhoid Infection. C. E. Belcher.
130.— Pneumonia. Wm. H. Russell.
131.— Fatal Needle. J. G. A. Davies.
132.— Treatment of Pneumonia. J. M. Hamilton.
133.—*Diet in Lithemia. A. B. Conklin.

Medical Council (Philadelphia), January.

134.— The Eye: How it Sees; Its Defects and Their Cure with Glasses. A. H. P. Leuf.
135.— Buisson Treatment of Hydrophobia. Benj. Edson.
136.— Extensive Burn, with Peculiar Course. Charles L. Lang.
137.— Case of Labor Complicated with Pelvic Abscess. A. L. Blesh.

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138.— Observations on Mechanical Treatment of Hernia and Its Adjuvants. J. Coplin Stinson.
139.— Some Reasons Why a Hepatic Stimulant and the Uric Acid Solvent are Essential in Treatment of Gout. William Hooker Vail.
140.—*Mental Element in Treatment of Headache. Philip Zenner.
141.— Advantages of Spray in Pseudomembranes of Pharynx. D. C. Brown.
142.— Lithemic Cystitis and its Treatment. G. Wight.
143.— Clinical Lecture Delivered in the Medico-Chirurgical Hospital. William L. Rodman.
144.— Alopecia. L. Duncan Bulkley.

AMERICAN.

2. **Congenital Disease and Diabetes.**—After reporting a case noticed in the title, Beyea discusses the probable pathology of this and similar cases, and concludes that in some cases of disease of the female organs, diabetic symptoms apparently dependent on the same are present, and there are also cases where the excretion of a large amount of sugar by the kidneys, without diabetic symptoms, appears to have a similar relation. Since this does not always occur in such disorders, it is probable that there must be in these some special lesions or abnormal secretion, or affection of other organs, or some special predisposing condition in the body. Such cases as are here described, and those which Tait and Lecorche have called climacteric diabetes, may be cured by the induction of the climacterium, the removal of gross diseases which prevent it, or by a normal progress of the change. He calls attention to the subject as worthy of consideration.

3. **Athetosis.**—Fischer concludes his argument for the reflex sensory nature of athetosis and similar conditions. The principal things which point to this in his judgment are that when a lesion has been found it has been in the posterior limb of the internal capsule or the adjacent thalamus. These lesions could not produce the symptoms by direct irritation of the neighboring motor tract, for if they did the abnormal movements would be more common in the lower than in the upper extremities. Chorea is frequently caused by emotions, which are impressions on the sensory and psychic centers. It is not reasonable to think that the cause of these nerve derangements should leave these centers untouched and leave impressions only on the more remote portions of the nervous system. Chronic chorea has frequently disappeared after removal of the peripheral irritation. In post-hemiplegic chorea and athetosis there is focal disease of the optic thalamus or posterior parts of the capsule. Cocainization of the motor areas prevents the occurrence of localized convulsions from their irritation (Prus). The primary point of irritation in a convulsion is sensory. In a large proportion of epileptics the initial symptom of the attack is a sensory aura. How can a lesion of the motor tract cause such an initial symptom? Many cases of epilepsy are admitted to be of reflex origin, and in many of these the disease has disappeared after the removal of the supposed exciting cause.

4. **Early Medical Societies.**—Packard reviews the data of the early medical societies in this country, and finds that such existed in the first half of the eighteenth century in Boston and New York. In the latter half was found the oldest one now existing, the Medical Society of New Jersey, organized in 1766. Several short-lived ones were begun about this time. The Massachusetts Medical Society was founded in 1781 and with the Medical Society of New Haven, founded in 1874, is still flourishing. The fourth in order of date is the College of Physicians of Philadelphia.

5. **Diet as a Method of Diagnosis.**—Spivak speaks on the necessity for detective ability, *a la* Sherlock Holmes, in the physician, expecially as regards the diet. He concludes as follows: 1. Every patient suffering from gastrointestinal troubles should be interrogated in the minutiæ of his diet, and its probable relation to the disease. 2. Since, as a rule, the answers are not satisfactory, therefore diet tests should be instituted for as long a period as it will be necessary to elicit all the required data. 3. Impress on your patient the fact that it is impossible to make a snap diagnosis. You may, at the first visit, suppose, guess, surmise, suspect and presume as to the nature of the malady, but it will be for his benefit to wait patiently until you have ascertained the cause of his trouble.

7. **Pruritus Ani.**—This condition, which is a very formidable one in certain cases, is described by Tuttle, who thinks that it is largely due to uric acid toxemia. It is only a symptom. He thinks all cases of the severe forms can be traced to rheumatism, uremic or catarrhal disease. As regards treatment, he has learned to largely rely for local applications on a combination of 10 to 20 per cent. carbolic acid, 2 to 10 per cent. salicyclic acid, and 50 per cent. boric acid, with glycerin or cold cream to complete the percentage to 100. He has tried ichthyol with great benefit, and when there is pain at stool, conium and cocain have been of service. Since he has treated it on the pathologic theory given above, he has not failed to obtain complete or more or less permanent relief in every case without surgical interference.

8. **Chicago's Drainage Canal.**—Stewart describes the Chicago Drainage Canal, and appears to believe that the dangers of infection there and elsewhere will be greatly diminished by it.

10. **Flexion or Bent-Knee Marching.**—In this paper the author discusses and illustrates the different forms of gait adopted in training and practice. The ordinary city gait, or straight leg parade marching causes more muscular effort and is less suitable for long distances than the flexion method which is used by savages and is being introduced to some extent in modern armies. The pictures and remarks are instructive.

11. **Intranasal Operations.**—Chappell publishes his method of operating intranasally, and gives pictures of his annular knife, splint retainer and splints. His remarks are chiefly confined to operations on the septum, where the conditions requiring surgical interference are spurs, deviations and thickenings. The former of these if small and also localized thickening of the septum, can be treated by his annular knives, while the larger spurs, he believes, are best treated by the saw, and he prefers Mial's cross-cut instrument, working both ways, for this purpose. The treatment of septal wounds most in favor is leaving them unprotected and relying on cleansing and free drainage for good results, but this has the disadvantage of permitting exuberance of the tissues and possible hemorrhage. He therefore describes his technique and the use of splints for the purpose of preventing this inconvenience.

13. **Antitoxin in Diphtheria.**—Rupp is skeptical of the benefits of antitoxin in diphtheria. He apparently does not consider it established that the Klebs-Loeffler bacillus is essential to the disease, nor does he put faith in the statistics of antitoxin. He offers nothing, however, new or valuable on the subject.

14. **Montana for Tuberculosis.**—Cases are reported by Schapps where the climate of Montana proved beneficial to patients after failure to receive help in Colorado and the Adirondacks, and he offers the proposition as an axiom that the place where the patient contracted tuberculosis is where he must not reside. He should place the greatest practicable distance between himself and the infected locality. To move only a short distance or for a limited time is simply trifling with a deadly disease. He notices the fashion as regards sanatoriums, and suggests that the treatment of consumption should be made a national affair and places of residence remote from the large centers of population be selected.

15. **Staphylitis and Elongated Uvula.**—The condition of staphylitis caused originally by colds, quinsy, etc., though apparently a slight affection, is described by Kilmer, who also gives the treatment for elongated uvula, which is its result. While local applications are generally ineffective, he has had success in some cases with the use of tincture of chlorid of iron, but in well-marked cases amputation is the sole resource. He performs the operation himself by first using a swabbing with 4 per cent. solution of cocain, both for allaying sensibility and its moral effect, then grasps the tip of the uvula with a thumb forceps and snips it off with curved scissors. Hemorrhage is generally slight, but in a few cases persistent bleeding occurs, either from too high cutting or the hemorrhagic diathesis, which should be looked after before the operation. The after-treatment usually consists in giving liquid food for twenty-four hours.

17. **Acute Serous Synovitis.**—Hoffmann calls attention to a method of treating serous synovitis of the knee and other joints, described by him several years ago, and gives a case illustrating its success. "The method might be called the compression treatment. In his hands it has proved far more satisfactory than the old ones of rest and immobilization, hot or cold packs, evaporating lotions, etc. Its application is quite simple, though considerable care and judgment should be exercised. The principle is to fill all depressions about the joint with cotton, and then to apply strips of rubber adhesive plaster in such a way as to entirely encircle the joint and several inches of the limb above and below it, so as to make firm and equable compression. The joint in which it has been found to be of the greatest value, and in which the results both immediate and permanent are truly remarkable, is the knee. This, moreover, is the joint by far most commonly affected by acute serous synovitis, whether produced by injury, exposure to wet or cold, overexertion, or some indefinite cause." The advantages of this dressing are its light weight, the immediate relief from pain, and the permission it gives for using the joint when necessary.

18. **Leprosy in Hawaii.**—The history of leprosy in Hawaii is detailed by Goodhue, who thinks that the chance of infection to the foreigner is less than it would be in this country, as he is on the lookout for it and takes the easy needful precautions. He suggests that we should look out for lepers throughout the United States, where they can go and mingle with the public without suspicion, and quotes an authority on diseases of the skin, who says that one of the most distinguished clergymen in the United States has been a leper for years, as an illustration of its occurrence. He suggests that removal of all our home lepers to the Hawaiian leper colony would be advisable.

19. **Home Treatment of Tuberculosis.**—Knopf describes various instruments for the care and disinfection of tuberculous sputum, and the regimen he would advise for consumptives treated at home. He thinks that the constant medical supervision of sanatoriums will also be beneficial in home treatment. Marriage of consumptives should be restricted as far as possible, and the production of children avoided, as far as it can be done legitimately.

20. **Vaccination.**—Fielder reports experiments with the method first reported in THE JOURNAL, by Dr. Hutchins, of preparing the skin for vaccination by denudation with caustic potash instead of scarification. He thinks it is less likely to be successful than scarification, on account of the formation of an eschar, which makes the denuded surface like parchment. The action of the caustic potash on the skin was studied, at his request, by Dr. Williams, of the New York City Health Department, on a calf. He finds that the remaining portion of the skin, after denudation, was covered with a layer of necrosed tissue, and that this might be an obstacle, either on account of its thickness or its alkalinity, to the entrance of the vaccin virus. He thinks the advantages of the method are that it is less painful and less terrifying to the patient and that it does not draw blood. The disadvantages are: 1. It takes more time. 2. It requires more skill. 3. It is difficult by this method to denude an area small enough; the vesicles are likely to be too large if the virus is very active. 4. It is less certain than scarification, no matter how skilfully done, because of the formation of an eschar which interferes with the absorption. Finally, the writer believes that the disadvantages named, together with the fact that a rather elaborate equipment is required, make the KOH method impracticable for use in wholesale vaccinations such as are performed by public vaccinators. As to its value in private practice, if it is deemed important in any particular case, such as that of a very nervous child, to avoid terrifying him, or to spare him the slight pain caused by scarification, this method may very well be tried; but unless the physician is skilled in the use of the method, or unless the virus is so active that it will "take" no matter how it is applied, he must not be surprised if failure is the result.

21. **Elisha Bartlett.**—Dr. Osler here concludes his appreciative notice of Dr. Elisha Bartlett, giving a review of his principal works and a history of the latter portion of his life. (See last week's JOURNAL, ¶ 13, p. 285.)

22. **Food and Drug Inspection.**—Abbott reports the experience of sixteen years' food and drug inspection by the State Board of Health of Massachusetts and enumerates what he considers the essentials necessary for carrying out such a system correctly. They are: 1. Sufficient appropriations. 2. A well equipped laboratory, both chemical and microscopic, with all the necessary apparatus, including that for photographing. 3. A responsible general director, who may or may not be connected with the health board. 4. An experienced food chemist and analyst, who, besides being an expert in his profession, should be able to give testimony with clearness and decision, when called on in court. 5. A collector who should watch the markets, keep track of apparent frauds, and though not necessarily an analyst, should be an expert judge of the quality of articles of food for sale, and familiar with the laws relating to fraud, so that he may have the requisite knowledge and skill to make complaints, examine witnesses, and prosecute cases before district or municipal judges. The advantages of such a system of food inspection are the protection of the public and the superior quality of food articles supplied them.

23. **X-Ray Examinations in Chest Diseases.**—Williams sums up as follows: X-ray examinations should be made both with the fluorescent screen and the X-ray photograph. Normal outlines in the upper part of the chest give us the best assurance that an aneurysm of the aorta is not present, though symptoms may obtain which lead the physician to suspect it. Outlines suggestive of aneurysm may be caused by a new growth, for example. To make a definite diagnosis of aneurysm by the usual physical examination, we may be obliged to wait for the development of marked signs, and this delay defers treatment. Before operating on an aneurysm near the thoracic aorta, the latter should be examined by the X-rays, for if an aortic aneurysm exists, operation would be unadvisable. X-ray examinations enable us to determine the extent of the aneurysm, whether or not it is increasing, and in some cases to make a diagnosis before there are physical signs.

24. **An Obstetric Sterilizer.**—Higgins describes and illustrates an obstetric sterilizer and lamp which will fit an ordinary obstetric bag, and describes the outfit, which he recommends.

25. **High Operation for Diseases of Scrotum.**—The disadvantages of operation on the scrotum are the difficulty of disinfecting, the shrinkage of the skin, especially after it has been under tension, and the great difficulty of securing an antiseptic field. The operation here recommended consists in

simply making a short incision in the groin, similar to that made in the familiar Alexander operation for shortening the round ligaments. The incision exposes all the contents of the scrotum so they can be reached with perfect ease. The field can be made perfectly clean and kept so, and a buried silver suture insures a rapid healing. There is no wounded scrotum to support and protect, no slipping of bandages, and no fouling with urine. It is surprising, he says, to see how considerable a mass may be delivered in this way, and if this is found impossible, a slight prolongation of the incision into the scrotal tissues will readily solve the problem.

36. **Syphilis of Nose and Throat.**—Brown reports four cases of nose and throat syphilis, which are of interest, in his opinion, from the fact that the inflammatory condition and ulceration occurred some time after the constitutional disease had apparently run its course, and this tendency of such symptoms to make their appearance after the disease seems in abeyance, that is, without cutaneous phenomena, is worthy of note, as, if it were not for the characteristic appearance, a wrong diagnosis might be the result.

37. **Nerve Physiology.**—In this chapter of his series on physiology, Benedict considers nerve fibers, nerve cells, the spinal nerves and the cranial.

40. This paper has previously appeared elsewhere; see THE JOURNAL of January 13, title 38, p. 96.

47. **Guaiacol in Malaria.**—Whalen reports four cases of malaria contracted in Cuba and successfully treated with guaiacol, beginning with 5 to 10 minims three times a day and gradually increasing the dose. He says: "As a result of my experience with guaiacol, I have arrived at the conclusion that, though I am unable to state positively that it is a specific in malarial fever, we possess in guaiacol a therapeutic agent of great value in many cases which have resisted the ordinary methods of treatment." In all the cases presented, quinin and other remedies were unable to control the chills and fever.

52. See abstract in THE JOURNAL of Dec. 9, 1899, p. 1494.

54. **Local Anesthesia in Radical Cure of Hernia.**—The subject of local anesthesia for the radical cure of hernia is fully discussed by Cushing, who reports a large number of cases and describes the anatomy of the nerve-supply of the parts involved. He uses Schleich's solution, No. 2, which has served his purpose best. For the anesthetization of individual nerve trunks, he has used from .5 to 1 per cent. sterilized solution of eucain B. or cocain injected directly into the nerve. Individuals advanced in years are usually kept in bed for a day or two prior to the operation, to test their ability to endure recumbency and to train them to void their urine in this position. It has been customary to administer, hypodermically, 1/10 to 1/8 gr. of morphin three-quarters of an hour before the operation, and repeat it again just before. It should be used with caution, however, as in old people it may cause confinement of the bowels and lead to distension. The operation is described in detail. Its advantages are: no post-etherization sequelæ, less liability to urinary disturbances, no backache, and comparative safety. The disadvantages seem trivial in comparison. More time is consumed, but this is about all.

55. **Interscapulo-Thoracic Amputation.**—Fowler points out the indications for this operation and the method, its complications and dangers, with a list of recorded cases.

56. **Mortality After Operation for Incarcerated Hernia.**—Two cases are reported by Marcy, both fatal, in which he attributes the issue to a sudden marked increase of intra-abdominal pressure, unduly limiting the function of the diaphragmatic muscles. No author has made reference to the danger which may occur from this cause, and he suggests that when any very considerable portion of the abdominal contents have been for a long time displaced, it is advisable to keep the patient in bed for quite a period, with a limited diet and moderate purgation. The advantage of this will be the less quantity of hernial contents to be returned and greater thinning and relaxation of the abdominal wall. The circulatory equilibrium will become more nearly normal by a gradual spontaneous reduction and diminution of the hernial tumor during the treatment.

60. **Progressive Rigidity of Spine.**—Sachs and Fraenkel discuss the two conditions of spinal rigidity, one described by Bechterew and the other the Struempell-Marie type. The former is characterized by chronic rigidity, often limited to the cervical region, other joints free. Root symptoms predominate. The anatomic findings are chronic leptomeningitis with root and spinal cord changes; the vertebral joints not being affected. In the Struempell-Marie type we have chronic rigidity of the spine with involvement of the shoulder and hip joints; no root symptoms. The anatomic findings are ossification of the ligaments, hypertrophy and ankylosis of the joints. Several cases are described, and the authors conclude that we can not consider the Bechterew type as a distinct clinic entity. As regards the other form, it has a certain resemblance to rheumatic affections, but its progressive course, and its limitation chiefly to males are marked differences. The resemblance to arthritis deformans is somewhat closer and they conclude that the changes are more in degree and localization than in kind, from this and from ordinary rheumatism. From a clinical standpoint, however, this last form deserves careful attention.

61. **Meralgia Paresthetica.**—Under this title Bernhardt has described a curious form of nervous trouble on a small surface of the outer aspect of the thigh. While a number of cases have since been reported, it is not a common disease, and the ten here added are a contribution to the subject. The diagnosis, course, etc., are fully discussed, and the authors conclude that there is considerable difficulty in classing it with either neuralgias or neuritides. It differs from the former in that pain is usually a subordinate symptom and not always present, while paresthesias are of paramount importance. It differs from neuritis in the fact that the symptoms are usually persistent and rarely progressive or retrogressive. Trophic changes never occur and the nerve is rarely tender, excepting occasionally at one point. If it were permissible to speak of a neurosis of the nerve, it would be the most fitting definition. The external cutaneous nerve of the thigh appears to be alone involved, and the authors suggest, as a definition, "a disturbance or deviation of the external surface of the thigh, characterized by various forms of paresthesia, associated with dissociation and more or less diminution of sensation." From a clinical standpoint they consider it a distinct morbid entity.

64.—See abstract in THE JOURNAL of Dec. 2, 1899, p. 1425.

65. **Uterine Inversion.**—The method described for the reduction of uterine inversion is the dividing of the cervix in the median line posteriorly, the incision being carried higher on the internal than on the external surface, the ring muscle being thus almost, if not completely, severed without opening the peritoneal cavity. Then comparatively light pressure with one finger tip on the lower uterine segment, just above the inner angle of the wound, easily reinverts the uterus. The cervix is then joined again by sutures, the whole operation requiring scarcely fifteen minutes. The case described made an afebrile recovery, and the uterus remains in good position.

66. **Abnormal Pelves.**—Davis' paper, resulting from an analysis of some 1224 patients of all races inhabiting the United States, excepting the Chinese and Indian, concludes as follows: 1. Among the child-bearing women in the United States, of the white and negro races, 25 per cent. have pelves smaller than the average and 7 per cent. have pelves larger than the average. 2. Four-fifths of the patients having abnormal pelves delivered themselves spontaneously. The operations most suitable for well-marked pelvic contraction and most successful for mother and child are the induction of labor, symphyseotomy, and Cesarean section when the mother is uninfected and the child is in good condition, and embryotomy when the mother is infected and in bad condition and when the child is dead or likely to soon die. 3. The general and the septic mortality rates of all classes of labor and of labor in abnormal pelves compare favorably with the results obtained by modern medicine and surgery when obstetric practice is conducted in accordance with modern scientific knowledge of the subject.

67. **Distension of Appendix.**—After noticing the literature, Wood concludes: 1. In nearly every case of cystic distension of the vermiform appendix recorded, there was no subjective phenomena arising from the condition and in the majority of cases it was discovered accidentally. 2. When the cyst finds its way into the inguinal canal there is danger of causing its rupture by taxis, as actually happened in Van Hook's case. 3.

The possibility of mistaking a large cyst of the appendix for a floating kidney must be borne in mind. In a thinner patient such a mistake might easily have been made in the case passing under his observation. He reports a case, and analyzes those reported by others.

71. **Convulsions After Labor.**—After giving the report of a case in which he considers the convulsions due to an acute stercoremia superimposed on the nerve exhaustion of a severe, protracted instrumental labor, Bond discusses the causes and treatment of the condition. He attributes much importance to fecal poisoning in this case, and is determined in future, whenever he has reason to believe the patient to be on the verge of labor, to advise her to take a good dose of castor-oil, followed by such other simple measures as will insure a thorough cleaning out of the large bowel. The possible bringing on of labor at this time by the purge would be no disadvantage, and the additional security against complications of intestinal origin would compensate for the nastiness of the dose. Especially is this desirable in cases where, for the daily stool, it has been deemed necessary to take one of the milder aperient pills at bedtime each night.

79. **Nasal Deflections.**—Kyle describes several varieties of nasal deflection and their treatment, viz.: the split cartilaginous septum, dislocation of the columnar cartilage, simple deflections with very thin cartilage, the letter S deflection, that involving the bony septum, those due to splitting of the cartilage, with bulging on one side only, and those with redundancy of the tissues, overlapping the septum and extending close to the floor of the nose. He notices these according to their causes: disease, traumatic, and congenital. As regards treatment, each has its own peculiarity. With the very thin and flexible form, he has used a flexible, or rather malleable tube, shaped first to fit the deformity, and then gradually widened, producing gradual pressure with slow inflammatory process. The tube should never be allowed to remain in sufficiently long to produce ulceration, and the gradual pressure will thicken the septum, increasing its strength. Wearing it from four to twelve hours a day for two or three weeks is generally sufficient. In the regular letter S curvature, surgical interference is called for. In simple curvature with redundant tissue, with thick and firm septum, if the curve extends to the floor of the nostril, a cut should be made on the opposite side close to the base and extending through the mucous membrane to the cartilage. Then, by means of a nasal saw, the cartilage should be cut to about one-third of the thickness. If the curvature does not extend to the floor, this incision should be omitted. The patient should be anesthetized, and by the use of the forceps the cartilaginous septum is fractured and crushed, permitting it to be folded into the desired shape and position, when it can be retained there by means of the tubes described. Details of the after-treatment are given. If the swelling is not marked, the tube may be left in position. While the tube is in place, the nostrils should be flushed every two to four hours, with a tepid solution of boric acid, 10 grains, and carbolic acid 2 drops, to an ounce of warm water. Until the fifth or sixth day, if the swelling is considerable, the tube should be removed daily and left out eight or ten hours, to avoid ulceration. Should the curvature extend back of the bony framework, the same method should be employed, except that in order to control the line of fracture of the septum, the bone should be sawed by means of a curved saw, at least one-third its thickness. If the deflection is a vertical one, of the V-shaped variety, before crushing, two incisions should be made two-thirds of the entire perpendicular length, dividing it into equal thirds. As a rule, there will be found enlarged turbinates with thick mucous membranes in the large nostril. These should be removed before the septum is straightened, otherwise they will produce obstruction. In that variety of the deflection in which there seems to be splitting of the two halves, with bulging only on one side, all that is necessary is a semicircular incision from the under portion of the projection, dissecting the mucous membrane, and sawing off the projection. Care should be taken to avoid penetrating the septum or injuring the mucous membrane or blood-supply of the opposite side. When there is redundant tissue, the mucous membrane should be dissected up and the V-shaped portion of the cartilaginous septum removed, the amount depending on the extent of the redundancy. The paper is illustrated so as to materially aid in the description of the operations. Each deflection requires its modification, and one method alone can not constantly be followed.

80. **Vibratory Massage in Chest Diseases.**—Ostmann reports four cases treated by vibratory massage, with the results. He offers them simply as the beginning of a study of the subject and this method of treatment. He says vibratory massage is contraindicated: 1. In all the acute inflammatory conditions of the sound-conducting apparatus. 2. In all diseases of the sound-perceiving apparatus with normal sound conduction. However, if rigidity of the ossicles exists it would be well to try the massage. 3. It would seem, from its mode of operation, that vibratory massage is of little benefit in middle ear disease attended with retraction of the ossicles, simple chronic middle ear catarrh, or when there is extensive atrophy of the membrane, or adhesions of the same. Further experiments are necessary to determine its place in these cases. Two weeks of treatment in all cases is necessary to form a fair estimate of possible benefits.

85. **Canadian and American Internes.**—Vaux makes a comparison between the hospital training facilities and systems in the United States and those in Canada. While the instruction is fully equal to the American, in the Canadian colleges, the later opportunities of the young physician are far from being what they should be, and very inferior as compared with those in the United States, according to his showing.

93. **Calcium Sulphid in Therapeutics.**—Earp finds calcium sulphid gives good results in conditions of the glandular system tending to suppuration, and in cases of indurated glands not reaching this point but discharging a thin, watery fluid. If there is a scrofulous tendency, the statement is especially worthy of emphasis. Boils are diminished in severity and frequency, and the pus becomes healthy and diminished. He reports several cases showing the benefit of the drug in different conditions. He does not use it in powder or tablet form, but prefers the gelatin-coated pills, and always examines them to ascertain whether they are reliable.

94. **Acute Croupous Pneumonia.**—French gives a synopsis of the answers to twelve questions sent out to the members of a local medical association, asking as to their treatment of acute croupous pneumonia. The majority did not believe in aborting the disease. Nearly all use local applications, 26 out of 27 using cotton or woolen jackets and 22 counterirritants in some form or other. The diet favored by the majority was a light or liquid one. Strychnin was almost universally used to sustain the heart; next to this, digitalis. Expectorants were not in favor. A small minority have used bleeding and a majority advised opiates, but the general tendency was to a sparing but judicial use of opiates, not as a routine practice. Alcoholics were not largely used, though freely by some. Cold applications were used by only a few. Several of the answers preferred the alkaloidal treatment, and four used oxygen by inhalations when respiration was embarrassed.

95. **Ichthalbin.**—From an analysis of the reports of this drug, Wolfe says: "1. Ichthalbin is non-toxic and non-irritant to the stomach, admitting, on this account, practically unlimited dosage. 2. It is an intestinal antiseptic, a stomach tonic, and an aid to constructive metabolism. 3. It has no odor and almost no taste, properties which make it easy of administration without combination or disguise."

98.—This paper has appeared elsewhere as an original, several times: see THE JOURNAL of February 3, ¶ 81, p. 287; also title 133, p. 354.

99. **Blood Stains.**—Wynn notes the peculiarities of blood stains, and concludes that with the microscope, while it may give data for saying that certain samples are not from this or that particular animal, it is impossible to say positively that any sample is human blood. He offers a method here which he has found successful in examining suspected blood clots found on leaves, grass blades and thin paper, where the usual methods were unavailing to show the corpuscles: Fragments of the clot were hardened in Mueller's fluid, embedded and sectioned, the same as in examining tissues. The sections were stained in hematoxylin and eosin in the usual manner. This rendered the demonstration of both red and white blood cells easy. The white were readily recognized by their nuclei. The red were clearly distinguishable, but too much hampered and deformed in

the meshes of the fibrin, to permit of satisfactory measurements. The latter end was achieved in the very thin portion found on the paper. This was clipped out, hardened in equal parts of absolute alcohol and ether, stained in eosin, dehydrated in alcohol, clarified for a considerable time in bergamot oil and mounted in balsam. The effect of the oil on the paper was to render it translucent. Sufficient light was transmitted to render the stained red cells clearly visible in the meshes of the paper. The paper, so to speak, was converted into a cover-glass, on which a thin blood smear had been made. The measurement of the corpuscles was then a simple matter.

116. **Appendicitis.**—Ochsner points out that the omentum naturally protects the appendix and, with the small intestines, can practically isolate it from the general peritoneal cavity, in case of inflammation. If undisturbed, and the case is only a simple catarrhal one, it will subside and the patient recover. If, however, it is a perforative or gangrenous case thus surrounded, it will form a harmless circumscribed abscess. If, on the other hand, it is disturbed, the trouble may be distributed throughout the peritoneal cavity with the worst result. He points out that in these cases we should do what we can to procure absolute rest for the parts, and prevent any interference with this protection. Especially should we avoid the giving of food, or anything that will start the peristalsis. The patient can be nourished by rectal feeding, but nothing but hot water should be given by the mouth. Following this plan, we avoid the two causes of pain, namely, pressure from gas and friction of inflamed intestinal surfaces due to peristalsis. He has used this method in a large number of cases since 1892, and in operating later has found only perforated or gangrenous appendix in a circumscribed abscess. Many of his friends have also used this method, and have greatly reduced their death-rate. There are only two conditions where the method will fail. In very emaciated patients, the omentum may be insufficient to protect the appendix, and in such a case operation should be done immediately. In patients where the attack commences directly after an unusually large and indigestible meal, peristalsis may be continued and give rise to disturbances. In such cases the stomach should be thoroughly irrigated to remove the food still remaining and any that may be regurgitated from the small intestines. He would give the rectal feeding for at least four days after the patient is apparently well.

122. **Modified Hartley-Krause Operation for Neuralgia.**—The case reported in the practice of Dr. Griffith is one of obstinate neuralgia, in which the nerve had been previously divided with only slight relief. The operation was performed, but instead of excising the Gasserian ganglion the two lower branches were excised for about one-half or three-eighths of an inch at their exit from the skull, the distal ends being pushed out. He calls attention to certain details and points suggested: 1. It may be impossible to avoid the temporal artery in the first incision; hence more profuse hemorrhage, possibly necessitating ligation. 2. Had the middle meningeal artery been enclosed in a bony sheath or canal, as is frequently the case, it could not have escaped injury sufficient to require ligation. 3. Skulls, even at this, the thinnest point, vary in thickness, requiring more chiseling if thick, but greater care to avoid injury to underlying structures if thin. 4. Excessive hemorrhage from the diploe and the subsequent loss of the bone flap argue in favor of trephine and rongeur forceps instead of the chisel. 5. Varying inequalities at the base of the middle fossa render the location of the ganglion more difficult in some skulls than in others. 6. Elevation of the lobe did not give rise to the stertorous breathing, progressively diminished respiratory effort, nor other symptoms of compression, but probably produced the hemorrhage which proved so troublesome at the close of operation.

133.—See ¶ 98, above.

140.—This paper has been printed elsewhere and was abstracted in THE JOURNAL of Aug. 26, 1899, ¶127, p. 537.

FOREIGN.

British Medical Journal, January 20.

Bromid Sleep, A New Departure in Treatment of Acute Mania. NEIL MACLFOD.—The method recommended in acute mania, by Macleod, and which he calls induction of the "bromid sleep," consists in giving large quantities of bromid, say 2 drams, in half a tumbler of water every two hours until an ounce is given, the first day, and a similar amount in the same way the following day. The results of this heroic treatment are absolute stupor lasting four or five days or longer. He has used it in nine cases, the last two of which he reports. In the last, death occurred in the stupor on the sixth day, which he attributes to a septic poisoning starting in the condition of the mouth, which had been overlooked.

Australasian Medical Gazette, Dec. 20, 1899.

Excretion of Urine and Urea by Diminished Kidney Weight. JOHN B. NASH.—The subject-matter of this paper was suggested by a lecture on the pathology of the kidney, by Prof. John Rose Bradford, and Nash, having three patients who had been operated on and one kidney or a part of one removed, made a series of experiments, testing the amount of urine and urea for periods of about fifty days, in two cases, two or three years after the operation, and in one, where the left kidney was removed, immediately afterward. The following conclusions appear to him to be justified: 1. If the kidney be removed, then three years subsequently the healthy kidney *in situ* will excrete more than the average quantity of urine produced by two normal kidneys. 2. This same kidney will excrete, per fluid ounce of urine and per diem, the average amount of urea that would be produced by two healthy kidneys. 3. If one-half of one kidney be removed, then two years afterward the urine voided will be the same in quantity as if two healthy kidneys were present. 4. The loss of the half of one kidney will cause no increase or diminution in the percentage or total amount of urea excreted. 5. If one kidney be removed, then the quantity of urinary water excreted by the other during the seven weeks immediately succeeding the operation will be below the average daily amount. 6. The urea produced by this one kidney will be less than the average proportion usually seen as the result of the work of two healthy kidneys, but probably not below the average excreted by two healthy ones from an individual recovering from a serious operation. The general trend of his observations is in the same direction as that of Professor Bradford, that one-third of the total kidney weight in the human being would be as capable of sustaining prolonged life, as he has found to be the case in a dog. The paper has the advantage of being a contribution to the pathology of the kidney from perfectly legitimate experimental observations on the human subject.

Bulletin de l'Academie de Medecine (Paris), Dec. 26, 1899 and Jan. 9.

Polyarthritis Deformans in Infants. MONCORVO.—Forty-eight cases are on record of polyarthritis deformans in children from three months to fourteen years of age, including twenty-nine girls. Moncorvo has recently observed it commencing in a two-months infant with heredosyphilitic stigmata. The mother also had polyarthritis deformans during her pregnancy. In over half the cases it developed between the age of 7 and puberty. The fixity of the arthropathic manifestations, their symmetric and progressive invasion, and restriction to the periarticular tissues and synovial fringes, indicate the diagnosis, and iodin and electricity are still the most certain therapeutic measures for polyarthritis in infancy.

Ultimate Results of Perineal Urethrostomy. A. PONCET.—In case of certain absolutely incurable strictures, Poncet opens up the urethra and divides it usually just above the stricture. The bladder end is then dissected out and brought down to an opening in the perineum, where it is sutured to the skin. The penile end is merely sutured across or left to take care of itself. Twenty-three patients have been thus operated on; a number over seven years ago; others five and three. The results are extremely satisfactory. The subjects have complete control of micturition and experience only slight inconvenience from the feminine method of urination, which is alone possible. None have been willing to undergo a second operation to restore the use of the old meatus, expressing entire content with their present condition. The chief drawback is that fecundation is impossible, although the genital function is otherwise unimpaired. In a few cases Poncet was able to remedy this by refraining from completely severing the urethra, and suturing the edges of the incision in the inferior wall directly to the skin, thus allowing the passage of part of the semen and urine by this orifice as well as by the new meatus.

Treatment of Arrested Growth. SPRINGER.—Among the measures to stimulate the development of the body, Swedish

gymnastics, continuous aëration night and day, saline medication, and hydrotherapy, etc., "the most effective is local stimulation of the epiphyseal cartilage of the lower end of the femur." The physiologic activity of this organ can be aroused and its building-up function be energetically stimulated by local excitations applied at this point: frictions, massage, compresses moistened with saline solution, etc., but chief in importance is electricity, in any form. The most rapid results are attained by combining static electricity with faradization of the surrounding muscles; the resulting circulatory and trophic hyperactivity is transmitted to the subjacent tissues. Muscles, periosteum and bone constitute a physiologic unity, tributaries of the same centers and receive their nourishment in common. This local action can be obtained as long as the ossification of the cartilage is not complete. General medication should also be applied to individual cases to obtain the maximum effect. The growth of this epiphyseal cartilage progresses intermittently, stopping and continuing after a period of rest. Springer also called attention to the favorable effect on the growth of the decoctions of cereals which he has been recommending for some time as a beverage.

Presse Medicale (Paris), January 3 and 10.

Passage of Serum from Blood-Vessels Into Tissues and Exudates. H. VAN DE VELDE.—The tests reported were made by injecting horse serum into rabbits. The antileucocytic property of the horse serum, which is absent in normal rabbit serum and fluids, passed almost immediately into the exudates and edema fluids of the rabbits, demonstrating conclusively that the tissues rapidly take up substances introduced into the blood by intravenous injections.

Cardiac Troubles in Convalescence from Typhoid Fever. J. MOLLARD.—In four-fifths of the cases of typhoid convalescence that have come under Mollard's observation, he has noted heart disturbances, and in about one-half the cases these disturbances, by their association in the same individual, constituted an actual syndrome with the following elements: 1. Disappearance or attenuation of the apex-beat; slight displacement of the apex of the heart when it could be distinguished. 2. Disturbances in the rhythm: tachycardia, embryocardia, arrhythmia. 3. Alteration in the sounds of the heart; mediocardiac systolic murmur; *bruit de galop;* attenuation of the first sound or of both sounds at once. All the patients had been convalescent a month at least. It is evident that the typhoid fever creates lesions in the heart muscle, and the troubles noted so frequently during convalescence are the connecting link between the initial cardiac accident and the slowly evolving myocarditis which does not become manifest for long years afterward.

Revue Hebd. de Laryngologie (Bordeaux), January 13.

Chorea of the Larynx. A. ONODI.—In this monograph Onodi states that the observations published under this heading have led to much confusion, and the term chorea of the larynx should be abandoned once for all. The observations were merely of different forms of nervous, reflex cough of various etiology and manifestations. When chorea accompanies the cough, the term "general minor chorea" includes the throat affection, and when there is a choreic agitation of the vocal cords alone, "choreiform movements of the vocal cords," as opposed to rhythmic, monotonous movements, is a good descriptive title. Under the heading, "chorea of the larynx," respiratory and chronic spasms of the glottis have been described, with a rise and fall of the larynx, due to the presence of an aneurysm. The epidemics described by Szego are cases of hysteric cough, from suggestion, phenomena of imitation, habit spasms, with nothing in common with chorea. In the observation published by Preysz, the symptomatic cough preceded a severe fatal affection of the central nervous system.

Berliner Klinische Wochenschrift, January 1 and 8.

New Names and New Conceptions in Pathology. R. VIRCHOW.—The practice of bestowing new names on diseases, etc., that have long been known, is inexcusable, according to Virchow. New names are only justified when a new conception is advanced, and then should be selected to conform to the rules of language, not some hybrid monstrosity. He refers with satisfaction to the words he has introduced into medical science: leucemia, thrombosis, embolism, myoma, glioma and myxoma, and then calls attention to the fact that when Glisson first described rhachitis he spelled it without the first h, thus forming a new word, although he evidently meant to connect the disease, rickets, with scoliosis of the *rhachis,* as shown by his illustrations. Virchow is not so positive in regard to this connection and proclaimed, in Vol. v. of his *Archiv.*, that the softening of the bones, which is the essence of rhachitis, does not affect the fully-developed bones but merely the cartilaginous or connective tissue. "But the medical world still clings to the delusion that the decalcification of fully-developed bones is the essence of what is in reality a disease of the cartilages rather than of the bones, and has little or nothing to do with the rhachis."

Fibroma in Mesentery and Extensive Resection of Small Intestine. E. LEXER.—Two meters were resected and the intestines sutured with lateral anastomosis; no drainage. The fibroma weighed 5 lbs. and was 25 cm. in diameter. Begouin has collected 29 observations of mesenterial tumors, with 14 cured, which includes Terrillon's 8 cases, one a lipoma weighing 57 lbs. Harris and Herzog report 10 cured in 18, and Shepherd has related another successful removal of myxofibroma weighing 10.5 lbs. and resection of 2.34 m. of the small intestine. Ruggi resected 3.30 m. in a boy of 8 years, healthy two years later.

Psoriasis and Glycosuria. F. NAGELSCHMIDT.—In 25 cases of psoriasis, alimentary glycosuria could be readily induced in 8, while in numbers of cases of other cutaneous affections it proved impossible to induce the glycosuria. Nagelschmidt reviews the observations of coexisting diabetes and psoriasis in literature and describes a case of Senator's in detail: a woman of 32, with psoriasis—patches noted occasionally since childhood—who died in diabetic coma. "The conclusion seems inevitable that there is some connection between diabetes and psoriasis under certain circumstances."

New Method of Treating Syphilis by Inhalation. R. KUTNER.—This communication recalls Lamb's description of the "origin of roast pig" and the great discovery that it was not necessary to burn down the house to obtain roast pork. The secret of the success of mercurial inunctions and pillow-slip and other methods of mercurial treatment is being ascribed more and more to the inhalation of the fumes and Kutner now discards everything except the direct inhalation of the mercury, which is rubbed into a specially constructed, air-tight box, heated or not, and the subject merely inhales the fumes through a tube and mask for half an hour a day. No symptoms of intoxication have been observed in any of the numerous patients thus successfully treated, and the inhaled mercury is found in the urine the same as with other methods. The subject is relieved from all the annoyance of frictions, etc., in the intervals, and the amount inhaled can be accurately determined and regulated. No stomatitis occurs from these brief treatments, although, as a precautionary measure, the patients are instructed to afterward gargle with potassium chlorate.

Artificial Production of Gout. H. KIONKA.—Gout in pigs is due to deposits of guanin in the muscles, joints, etc., of the diseased animals, but it is caused in fowls the same as in man, by concretions of uric acid. Gout can also be induced in fowls by the administration of phenol, acetone, sublimate, aloin, oxalic acid and even sugars and chromic acid, and not merely in poultry but in ostriches, hawks and other birds of prey. Kionka has succeeded in inducing gout by feeding fowls exclusively with meat. They seemed to be perfectly healthy for two to five months, when the manifestations of the disease appeared, most prominent in the gradually developing tophi on the joints, and between the tendon sheaths of the legs and feet. Deposits of urates were also found on the serous membranes of the intestines, and uric acid infarcts in the kidneys. The fowls craved lime and ate 10 gm. of powdered egg shells a day, under the influence of which the ammonia in the urine was increased, but the elimination of uric acid decreased 40 to 50 per cent. V. Noorden recommended lime for the uric acid diathesis, three years ago, as he had observed that the elimination of phosphates diminished under it. The fact has also been noted that in human and dog urine, carbamic acid is excreted in large amounts after ingestion of lime. Herxheimer has tabulated tests which show a decrease of 12 to 13 per cent. in the elimination of uric acid when 6 to 21 grams of calcium carbonate are ingested daily.

Centralblatt f. Bakteriologie (Jena), Dec. 23, 1899.

Experimental Yellow Fever. A. BRUSCHETTINI.—The most interesting points, in this report of two years of comprehensive research, are the writer's enthusiasm in respect to the bacillus icteroides as a most extraordinary and extremely pathogenic micro-organism, differing widely from all others, and offering a most fascinating laboratory study of the mechanism of infections of degenerative type and immunization against them; also his statement that he found experimental vaccination much more effective when cultures were used entirely or nearly free from toxin. "The antitoxin in the blood of an already immunized animal is partly destroyed or neutralized by an injection of the toxin, thus diminishing its vaccinating power and it never regains its former intensity, while, on the other hand, the amount of antitoxin is progressively increased with every injection of toxinless cultures." He therefore advocates discarding the toxin in producing vaccin to combat infectious diseases, as Tizzoni has already recommended for tetanus. He mentions that the characteristic "wax seal" appearance, which is lost by passage through rabbits, can be restored by inoculating a dog with the cultures, and that the virulence of the bacillus can be increased by passage through animals. None of his attempts to induce infection *per os* succeeded. He found the immunizing substance chiefly collected in the spleen and liver, and emulsions of these organs protected animals against infection even when the blood had not yet acquired any protecting power. "The facility with which the characteristic symptoms of yellow fever can be induced in all the laboratory animals explains much of the mystery hitherto surrounding this dreaded disease, aside from its importance in the etiology."

Reducing Capacity of Bacteria. F. MUELLER.—The morphology of bacteria is proving less reliable as a means of differentiation than was anticipated, and consequently the physiologic and biologic properties are acquiring new significance. Mueller's study of the reduction process of the bacteria in certain stains shows specific differences with each variety, both quantitative and qualitative, which will aid materially in the differentiation. In selecting stains for the purpose, those whose constitution is known should be preferred: methylene blue, litmus, rosanilin and indigocarmin were used in the tests reported. The reduction occurs outside of the cell body, and is evidently due to the action of a metabolic product excreted by the bacteria, which gradually loses its reducing power, from oxidation. All the bacteria tested, aërobic and anaërobic, have this reducing capacity more or less marked. A number take up the stain so intensely as to be appreciable to the naked eye—seen best on stained, agar-streak culture—but the color-forming bacteria usually do not.

Centralblatt f. Inn. Med. (Leipsic), Nov. 18, 1899, and Jan. 6, 1900.

Anomalies of Body Structure with Cardioptosis. L. FERRANNINI.—Rummo called attention, some time ago, to the primary and usually isolated ptosis of the heart are connected with any dilatation of the organ or mechanical factor, but due exclusively to some essential alteration in its suspending apparatus. This condition is a special localization of the ptosis diathesis, in which a defective development renders the connective tissue less capable of accomplishing its task, and entails severe disturbances from slight causes. Four observations are described in detail, all showing abnormal development affecting the vascular system most prominently, causing in addition to the typical cardioptosis, mitral stenosis and various trophic disturbances.

Influence of Brief Action of Cold on Composition of Blood. E. GRAWITZ.—Not a trace of hemoglobin could be detected in the serum of rabbits dipped into cold water for a few minutes or submitted to other similar tests. But the increased specific gravity of the blood and serum immediately afterward demonstrated that the cold drives the lymph out of the capillaries into the tissues. This change in the currents of the tissues suggests an explanation of the tonic and metabolism-stimulating effect of certain hydrotherapeutic measures. Later, friction and warmth send the lymph back again, shown by the prompt alteration in the concentration of the blood.

Neurologisches Centralblatt (Vienna), Nov. 15, Dec. 15, 1899, and Jan. 1.

Are All Ganglion Cells Directly Connected with Arterial Circulation? A. ADAMKIEWICZ.—The writer has succeeded in establishing that the intervertebral ganglion cells of the brachial plexus are each enclosed in a delicate little capillary which branches from the arterial blood capillaries and enlarges to enclose the cell like a glove, narrowing beyond it and again subsiding into an arterial capillary. These secondary capillaries do not allow the passage of the corpuscular elements. This mechanism has only been established for the ganglion cells mentioned, but Adamkiewicz considers its existence demonstrated for all the ganglia of the brain and cord, by the difference between the results when any non-physiologic substance, distilled water for instance, is applied by instilling it on the exposed brain or even directly on the ganglia. It scarcely disturbs them in their repose (rabbits), but if even 2 to 3 c.c. of the same substance is sent into the cerebrum through the carotis, the ganglia respond violently to the excitation, with nystagmus, disturbances in the respiration and pulse and tetanic convulsions. The only explanation of this difference in the reaction is the assumption that the water comes into more intimate contact with the ganglion cell through the circulation than even by direct external contact.

Dementia Paralytica and Degeneration. P. NAECKE.—It is possible that an endogenous or exogenous intoxication, slow or rapid, may prove to be the basis of all mental disturbances, and not merely of the so-called infectious psychoses, affecting a predisposed brain. Naecke ascribes great importance to heredity in this predisposition of the brain, which may remain latent and not appreciably affect the mental capacity. The probability of these assumptions is apparent even now. One of the preliminary questions is whether all the so-called external and internal causes of mental disease, especially emotional excitement, directly or indirectly convey toxic substances to the brain, which Naecke considers a most important factor in the etiology of paralysis.

Antagonistic Reflex. SCHAEFER.—Perpendicular compression of the middle or upper third of the Achilles tendon causes slight pain and, by shortening the tendon, produces a minimal plantar flexion of the foot and great toe, in normal conditions. But in five cases of severe mental disease Schaefer noted that this compression was quite painful and induced strong contraction of the dorsal flexor digitorum and tibialis anticus, that is, of the antagonists of the tendon. He asks for an explanation of this.

St. Petersburger Medicinische Wochenschrift, Dec. 30, 1899.

Treatment of Pulmonary Tuberculosis in High Altitudes. T. v. PACHT.—The more rarefied the air, the greater the evaporation, and the blood therefore becomes concentrated in proportion as the altitude is higher. This is the cause of the increase in the number of corpuscles, so variously interpreted. A very anemic patient with extremely hydremic blood will find this concentration to one-third or one-half of the total amount of blood most disagreeable, and be unable to bear a high altitude, while in case of moderate anemia the concentration of the blood enables the tissues to be better nourished, and hence improves the general health. Persons with extremely abundant expectoration are also much improved by the decrease in the quantity of the expectorated matters, which also favors the much-needed repose of the lungs. But in those with dry catarrh or ulceration of the larynx, the cough is increased by the dryness; such persons belong in a moist climate. The effusion in pleuritis humida is dried up and absorbed much more rapidly at a high altitude, while the effect in pleuritis sicca is distinctly the reverse; the deeper respiration necessary in the mountain air is even injurious on account of the increased friction of the pleural layers. The article refers to the danger of overexertion in sports in much frequented resorts, and quotes that "Davos looks like a factory town now, with its hundreds of smoking chimneys," while the much vaunted absence of wind in the valley leaves the smoke hanging for days at a time over the place.

Pruritus Vulva.

℞ Menthol ..... gr. xii
Alcohol ..... ʒiss
Aquæ dest ..... ʒiii
Acidi acetici diluti, q. s., ad ..... ʒi
M. Sig. Apply locally as required.—Cumston: *Med. Record.*

Societies.

Perry County Medical Society.—This Society met at Duncannon, Pa., January 25, and elected the following officers: president, L. M. Shumaker; vice-president, H. D. Reutter; secretary, A. R. Johnston; treasurer, D. B. Milliken.

Ramsey County Medical Society.—The annual session and election of officers was held by this Society, in St. Paul, Minn., January 29. The new officers are: president, G. A. Renz; vice-president, Cornelius Williams; secretary, E. F. Geer; treasurer, Fred Leavitt.

St. Joseph County Medical Society.—The fourteenth annual meeting of this Society was held in South Bend, Ind., January 30. Among others presenting papers were E. W. Andrews, Weller Van Hook, and G. Frank Lydston of Chicago, and L. H. Dunning and F. C. Ferguson, of Indianapolis, Ind.

Denver and Arapahoe Medical Society.—The following named physicians were elected officers of this Society, at its annual meeting, January 9, held in Denver, Colo.: president, C. K. Fleming; vice-president, H. G. Wetherill; treasurer, W. J. Rothwell; financial secretary, G. H. Stover; secretary, L. P. Conroy.

Thirteenth International Medical Congress.—The Secretary-General of the Congress gives notice of the following reductions in rates: 1. All the railway companies of France will grant to the members of the Congress a reduction of 50 per cent. on round trip tickets, as follows: Every member will receive, on application to the Secretary-General, Dr. A. Chauffard, 21, Rue de l'Ecole de Médecine, Paris, a ticket which must be stamped at the railroad station where he enters France, on paying the full price of a single trip to Paris. At Paris the member will have this ticket *viséd* in the office of the Congress, and it will then serve as a return ticket without additional expense. The journey to Paris having been paid entirely, and the return trip being free, there is a 50 per cent. reduction. It goes without saying that in order to secure this, the return trip must be to the same point at which the original fare was paid. 2. The French line—La Compagnie Generale Transatlantique—will allow members of the Congress a reduction of 10 per cent. on tickets from New York City. 3. The Secretary-General has arranged to provide to early applicants a number of lodgings, including light and service, at the rate of five francs a day; and various agencies also advertise reduced rates for lodgings. For further particulars and application blanks for membership, address, Dr. H. B. Jacobs, Secretary, American National Committee, 3 W. Franklin Street, Baltimore, Md.

New York County Medical Association.

Jan. 15, 1900.

DR. THOMAS H. MANLEY presented a case of secondary osteoplasty, a specimen of gangrenous perforation of the sigmoid flexure, and a specimen of very large omental hernia.

DR. F. H. WIGGIN presented a large fibroid uterus, just removed by the intraperitoneal method.

NEW METHOD OF RETROPERITONEAL DRAINAGE OF PYOSALPINX.

DR. LEON F. GARRIGUES read the first paper of the evening, on this title. It included a report of five cases so treated, but the histories were not read. The author is of the opinion that pelvic suppuration should be treated by vaginal drainage, not only because this procedure is almost free from risk, but because convalescence is so very much more rapid after it than where laparotomy has been performed. In addition to the disadvantage of longer convalescence, which oftentimes extends over many months, there is the danger of ventral hernia. He has seen severe hemorrhage follow puncture of the abscess and packing with iodoform gauze, and besides such packing is painful, and by reason of the pressure to which it is subjected, does not drain efficiently.

The technique which he advises for these cases is as follows: An incision is made at the anterior vaginal junction, commencing posterior to a transverse line drawn through the cervical canal on the side corresponding to the pyosalpinx, and following the contour of the cervix for a distance of three-quarters of an inch, passing through the whole thickness of the vaginal wall. With the forefinger, the peritoneum can usually be quite readily stripped off from the uterus, and this should be done until the origin of the Fallopian tube is reached. Having located the most prominent part of the pus tube, an assistant presses downward while the operator pushes a pair of blunt scissors into the pyosalpinx. Having explored the abscess cavity with the finger, and broken down any pockets, a T-shaped rubber drain is inserted. He does not approve of irrigating the cavity at the operation, lest there might be a minute opening present through which infected matter might gain entrance to the peritoneal cavity. Four out of the five cases were operated on in tenement houses, and all five made complete recoveries.

DR. J. RIDDLE GOFFE said that while he is an earnest advocate of the vaginal route for the treatment of pelvic disease, he does not approve of the method advocated by Dr. Garrigues, though he has never personally tested it, nor had an opportunity of listening to a detailed report of the cases presented; but on theoretic grounds he objects to opening up the broad ligament in these cases. This ligament is bountifully supplied with lymphatics, and the danger of infection by so doing seems too great. Another objection is that it does not seem to be capable of effecting a radical cure. The method which he prefers and practices, consists in freely opening Douglas' pouch and making a thorough exploration. He then brings down the uterus and its appendages through an anterior vaginal incision. Where the abscess is large, it is necessary to first puncture and drain.

DR. J. E. JANVRIN also favors the posterior incision and drainage through the cul-de-sac—a method which is not liable to excite peritonitis, and which will, in the majority of cases, effect a cure. Because of the danger of infection in Dr. Garrigues' method, he considers it fully as dangerous as the more usual one of incising the posterior cul-de-sac. From personal observation, he vouches for the good results attainable by Dr. Goffe's method.

DR. H. J. BOLDT said he finds it difficult to understand how the method described in the paper could be employed for cases in which the pyosalpinx is high up in the pelvis, or where there is only a slight enlargement of the tube. He prefers to open the posterior cul-de-sac widely enough to admit his hand. In this way he can satisfy himself that he is really dealing with the tube, and that there are no other pus collections in the pelvis.

DR. GARRIGUES replied that the fact that in all his cases the temperature promptly fell to normal is a sufficient proof that the theoretic danger of infection has been exaggerated. In his own hands this technique has yielded a radical cure. As he has only employed it where the tubes were but slightly enlarged, he could not fully answer one of Dr. Boldt's criticisms.

MANAGEMENT OF HERNIA.

DRS. PARKER SYMS, John F. Erdmann, Henry Roth, Irving Haynes, and William B. Coley presented papers on various phases of strangulated hernia, which appear in THE JOURNAL.

DR. WILLIAM B. DEGARMO spoke of the negligence of many medical practitioners in regard to the proper application of trusses. This was a matter requiring the physician's personal attention. Where a light truss will efficiently support a hernia, no other treatment is required; on the other hand, where it occasionally allows the hernia to escape, or the patient is careless about the use of the truss, operation is demanded. He believes that the operation for radical cure should be done in almost every case of strangulated hernia, and after the patient has worn a bandage for four or five weeks, it is his custom to dismiss him, so great is his confidence in the radical cure. While all surgeons recognize the danger of resorting to taxis, the fact remains that many practitioners continue to employ it before giving their consent to operation. They will succeed more often in reducing the hernia if they will attempt to draw down the hernia farther instead of attempting to push it back.

DR. CHARLES N. DOWD, in the discussion, called attention to the fact that the operation for the relief of a strangulated hernia can be safely done at the extremes of life. He recently operated on a strangulated femoral hernia in a very feeble man of 75 years, with excellent result, and the same was true where he operated on strangulated herniæ in infants of 4 and 6

months of age. This operation is not one from which the general practitioner should shrink in an emergency; it is very simple, the chief point being to remember to cut down to the aponeurosis of the external oblique and divide this above the point of strangulation.

DR. LUCIUS W. HOTCHKISS said that he too had operated successfully for the relief of strangulated hernia in young infants, and also in a woman of 81 years. When the diagnosis is reasonably clear, operation should not be delayed.

Philadelphia Pathological Society.

Jan. 11, 1900.

NEW METHODS OF STAINING THE SPOROZOA OF MALARIAL FEVER.

DR. ALBERT WOLDERT, in a paper on this subject, said that for general work examination of the fresh blood is preferable to the stained methods in examining for the malarial parasite, on account of that method giving better opportunity for studying the general characteristics of the hematozoa. However, the stained methods have their place, because in this way the specimen becomes portable and remains permanent. The stained method requires a very careful technique, and another objection to it is that it frequently requires from fifteen minutes to two hours. A method which will shorten this period has been devised by Futcher and Lazear, of Baltimore, Md. It is a combination of the fixation method of Benario and a stain first employed by Marchoux. Two solutions are required, a fixation and a staining fluid. The first consists of a .25 per cent. solution of formalin in 95 per cent. alcohol; the second of a saturated aqueous solution of thionin (Cogit) in 50 per cent. alcohol—20 c.c. and 2 per cent. aqueous solution of carbolic acid, 100 c.c. The blood specimens are fixed for one minute in the fixation fluid, and afterward stained for fifteen seconds. The whole process can be completed in two minutes and the specimens are permanent. The second stain is one prepared by the speaker in an attempt to make the Prince blood stain. It is a triple stain and solution No. 1 has toluidin blue, gr. xv.; distilled water, 3iv. Solution No. 2 has acid fuchsin, gr. xv.; distilled water, 3ss. Solution No. 3 is 2 per cent. aqueous solution of eosin. The specimens are fixed by heat and stained for five minutes. By the latter the organisms are easier to find than in the former method.

Crescent organisms were exhibited, which had been found on the tenth day and after 90 grains of quinin had been given.

DR. A. O. J. KELLY said he had used the first method and found it a useful and easy one.

DR. J. A. SCOTT does not believe that any quick method of staining is needed, since it is so easy to study the fresh specimen of blood.

STATUS LYMPHATICUS WITH GASTRIC TETANY.

DR. ALFRED J. HAND presented specimens from a case of this condition in a child who had manifested symptoms of tetany with symptoms also indicating involvement of the higher nerve centers. Stroking either side of the face produced contraction. Coughing and dyspnea were also present. Fever was absent until shortly before death. At the autopsy the thymus gland was found to weigh 10 grams. The heart was normal, the liver suggested amyloid degeneration and weighed 232 grams. There was a supernumerary spleen present. The pancreas was normal, stomach walls thickened, and there was hyperplasia of Peyer's patches.

DR. SIMON FLEXNER said that, in an epidemic of diphtheria, he has noted the enlarged thymus, and hyperplasia of the lymph tissue of the intestines.

SYPHILIS OF SPINAL CORD.

DR. JOSEPH SAILER presented a specimen from a man who gave a history of having been wounded by poisonous arrows thrown by uncivilized natives in South America. He said he was wounded in ninety places, and at each point a chancre (?) developed. A scar had also been present on the penis. Section of the spinal cord was shown, in which could be seen two large thrombi.

PULMONARY ACTINOMYCOSIS.

DR. SIMON FLEXNER presented a specimen of lung showing actinomycosis, from a woman of middle age, who had suffered from cough and pain in the chest. A swelling subsequently developed in the chest, and ruptured, leaving a sinus which communicated with the lung. In the pus actinomyces granules were found. At the autopsy the lower lobes of both lungs were found involved. Section showed consolidation of the tissues with here and there yellowish masses, surrounded by overgrowth of connective tissue. Microscopic sections showed the micro-organism.

ADDISON'S DISEASE.

DR. FREDERICK A. PACKARD presented specimens of suprarenal glands taken from a patient with Addison's disease. There had been several brownish spots in the region of the right nipple. Two features which led to the diagnosis were the low-tension pulse and gradual failing in general health. In the right suprarenal gland tuberculous nodules were found. The left was also diseased.

Jan. 25, 1900.

TYPHOID FEVER SYMPOSIUM.

DR. A. C. ABBOTT reviewed the epidemiology of the disease. While typhoid fever has always been regarded as an autumnal affection, there are certain years in which the number of cases has been much higher in the spring than in the fall. This is particularly noticeable in the records of Philadelphia for last year. One interesting feature noticed in the epidemic of typhoid fever here last year is that the mortality in different wards was two or three times what it was in others. In those where the mortality was highest, the residents had been furnished with water from the Queen Lane reservoir, which it is believed had been contaminated.

DR. J. H. MUSSER spoke of the value of clinical laboratory methods in diagnosis. One to-day recognizes the value of laboratory facilities as an aid to diagnosis, particularly of the infectious diseases. While an examination of the excretions in typhoid might be of some aid, yet such results obtained would not compare with the positive evidence furnished by the Widal reaction. It has been found that where careful technique has been followed in making this test, it has proven correct in over 98 per cent. of the cases of typhoid. Some inaccuracies doubtless occurred from the fact that some observers diluted the blood too much, thus furnishing ground for failure in some cases. The reaction in this disease may at times be intermittent, or delayed; yet it should be found in all cases if persistent efforts are made. The reaction is of the greatest importance in clearing up the diagnosis of an obscure nature. One precaution is that the reaction may be obtained in cases in which the patient previously had an attack of enteric fever, thus leading to an error in diagnosis. An examination of the blood is important. As is known, the leucocytes are not increased, and if they should be, that might indicate a septic process or an impending perforation of the bowel. Their increase after perforation chiefly affects the polynuclear forms. The diazo reaction is important and has been found in 90 per cent. of the cases. The presence of this reaction during the progress of the disease, however, limits the usefulness of this test.

DR. A. O. J. KELLY briefly reviewed the statistics of the German Hospital. During the past two years the dried blood has always been used in making the test; 1002 tests were made in 557 cases of typhoid. In some instances the wet method was tried as a confirmatory measure. The dilutions were 1 to 10 or 1 to 15 in fresh bouillon cultures. By the dry method a positive Widal reaction was not only obtained in typhoid fever, but also in cases of tuberculosis, abscesses, rheumatism, appendicitis and other diseases. After a very thorough trial he is convinced that the dry method is not so accurate as the wet.

DR. A. C. ABBOTT stated that at the city laboratory the dry method has been used as a routine measure, the wet in some instances. By the dry, 3 per cent. of errors occurred.

DR. H. W. CATTELL gave the statistics of the Woman's Hospital. The percentages in which the positive reaction was obtained was quite high. In his opinion the diazo reaction is important in clearing up cases of summer diarrhea in children, many of which are undoubtedly typhoid. Dimmel has spoken of a method of differentiating the typhoid bacillus from the colon. This consists in growing the micro-organism in a bouillon culture with the liver, and afterward using the fermentation and reaction test with litmus paper. If the litmus turns red, it is an indication that the organism was that of typhoid.

DR. J. McFARLAND spoke of the cases in which the reaction was obtained at the Medico-Chirurgical College. He recognizes

element is always present. Tschisch speaks of *coitus reservatus* that the personal equation, by many observers, may vary considerably in obtaining the Widal reaction by the dry method.

DR. J. D. STEELE spoke of the cases which occurred at the Presbyterian Hospital. His experience with the dry method agrees with that of Dr. Kelly, in that the dry does not seem to be as reliable as the wet. His dilutions were 1 to 10 and 1 to 20. The cultures were used from twenty-four to thirty hours. In obtaining the Widal reaction he noticed one avenue which may lead to failure, in that in most specimens, near the edge of the hanging drop, the bacilli are seen to become non-motile or give a picture of clumping. He has not called the reaction positive unless clumping was observed some distance away from the edge of the cover-slip. Regarding the diazo reaction, he has made examination of the urine and believes its persistence is an indication that a relapse is imminent or that the convalescence will be delayed. Ordinarily it would disappear in the latter weeks of the disease.

DR. SIMON FLEXNER spoke of the atypical lesions found in enteric fever, and of typhoid septicemia. As is known, many cases of typhoid have been reported in which no intestinal lesion of the bowel occurred, and yet a positive Widal reaction was obtained. In these the micro-organisms were discovered in the liver, spleen, lymphatic glands and bone marrow. Through the blood their distribution was made possible, yet it is exceptional to find the bacillus in the circulating medium, a true typhoid septicemia. While in Manila, he learned that the intestinal lesions in typhoid were very slight. In fact, many could not be diagnosed at the autopsy table, and yet the micro-organisms might be found in the blood.

DR. T. G. ASHTON believes that if proper care were exercised many epidemics of typhoid fever would be prevented. Proper care means thorough sterilization of the feces, urine, bed linen, and care of the hands in those that attend the sick. The modes of infection were detailed. In order to disinfect the stools it is advised to use four ounces of chlorid of lime to one gallon of water mixed thoroughly with the stool and allowed to stand for one hour; 10 per cent. carbolic acid might be used, as also bichlorid of mercury, 1 to 500. The latter solution should be acidulated and allowed to stand for a longer time. To sterilize the bed linen, 3 per cent. carbolic acid solution will do. It should be immersed in this solution and then boiled.

DR. J. MCFARLAND spoke of the present outlook of the serum treatment. He thoroughly reviewed the literature on the subject. In trying to manufacture artificial antitoxin from the horse, by first injecting pure and afterward sterile cultures, he was not successful. One point should be remembered in this connection and that is, any remedy which is recommended as an antitoxin in typhoid should also be antimicrobic in action.

Chicago Medical Society.

Jan. 24, 1900.

OCULAR THERAPEUTICS FOR THE GENERAL PRACTITIONER.

DR. ALBERT B. HALE read a paper on this topic, and said: New drugs from the chemist's laboratory are constantly being added to the physician's table, and some deserve to be retained both by specialists and general practitioners. Among drugs useful in ophthalmic therapeutics we have, of the newer ones, four that are particularly valuable.

Holocain.—This is a synthetic product, related to phenacetin, so that its name is merely imitative of cocain, which it may in many cases supplant. Its salt, the hydrochlorid, is soluble to about 2.5 per cent. in cold water, and should be applied in 1 per cent. aqueous solution. It has particular advantages for the general practitioner. In removing foreign bodies from the conjunctiva or cornea, for instance, it is better than cocain, as it acts quicker, causes little pain, does not dilate the pupil, in temporary use affects corneal epithelium less, produces no ischemia, to be followed by hyperemia. It is somewhat antiseptic—enough to keep itself, at least—and can be sterilized by boiling, with no disturbance of chemical composition. It must not be injected hypodermically, nor be applied to other than ocular mucous membranes, as it is systemically poisonous. It must be prepared and kept in porcelain, not glass, as the alkali of the glass influences it.

Euphthalmin.—Of the three effects of local applications to the eye—omitting cautery or astringency—anesthesia, mydriasis, cycloplegia, many drugs produce all three, in varying proportions. Modern chemistry has supplied holocain for simple anesthesia. As yet, no drug produces simple cycloplegia alone. Mydriasis alone, however, can now be produced by euphthalmin, a complex synthetic product. It is best used in a 5 to 10 per cent. watery solution. Here the author gave tables and cited authors to prove that cycloplegia is practically absent, and that it can be used in all cases at any age to produce a dilation of pupil for study of lens and fundus. His conclusions were: 1. No subjective symptoms are produced. 2. Only mydriasis is caused, of short duration, beginning in thirty minutes. 3. The effects are shown earlier in youth than age. 4. Ocular tension is not increased. 5. No hyperemia nor ischemia of the conjunctiva is produced, and the corneal epithelium is unaffected. 6. Accommodation is practically unaffected. 7. The normal pupil is soon restored. 8. It is apparently non-poisonous.

Protargol.—This he considers better than any inorganic silver salt yet used. It is proteid compound, containing about 8 per cent. of silver, and its bactericidal power as great as that of silver nitrate, while it penetrates deeper; is much less painful, not so dangerous to the epithelium, and can be used much more frequently; it is not so affected by light, and its brown color is an advantage for local application. Perhaps the silver nitrate is better for direct action on the gonococcus, but for all other inflammations or irritations of ocular membranes, protargol, in 5 to 10 per cent. watery solution, is much better for the general practitioner.

Extract of Suprerenal Capsule.—Abel (Johns Hopkins) was quoted with reference to epinephrin. Bates' experiments were confirmed, showing that it is astringent more than hemostatic, acting through the uninjured vessel wall. It is useful for cosmetic purposes, to blanch a red eye, to assist in prolonging anesthesia with cocain or holocain, to aid other drugs in treating inflammations of the conjunctiva. It is an unstable powder, spoils easily in the presence of water, and must therefore be mixed fresh for use, as it has no well-defined solubility.

PREVENTION OF TUBERCULOSIS.

DR. CHAS. J. WHALEN presented a paper on this subject; it will appear in THE JOURNAL.

TREATMENT OF FRACTURES OF EXTREMITIES BY MEANS OF SCHOENBORN-BEELE SPLINT.

DR. EDWARD H. LEE followed with a paper on this topic. He gave a detailed description of this splint, and demonstrated its usefulness on a patient. Among the many advantages which it offers are that it can be applied immediately; it is light and neat; there is no necessity of padding with cotton; it is not apt to produce decubitus; it may be removed and put back in place in a very short time, and the cost of the material is moderate. He knows of no other that will adapt itself so perfectly to the form of the limb as this one. In 1891, during his term of service as interne under Professor Schoenborn at the Julius Hospital in Wurzburg, Germany, he had the opportunity of the splint. For the past seven years he has used this method in the Cook County Hospital, the Alexian Brothers' Hospital, and in private practice in a great number of cases. It has been used extensively by a number of the internes of the Cook County Hospital, and by some of the members of the attending staff, and the results have been excellent. Dr. Lee decsribed the application of the splint to various fractures.

NATURE OF NEURASTHENIA; A STUDY OF RECENT LITERATURE.

DR. R. M. LADOVA read a paper on this subject, saying that this disease is a general chronic functional neurosis, a state of continuous exhaustion and irritability of the nervous system. The predisposing causes are heredity, either neuropathic or arthritic. The determining causes are trauma, anemia, toxemia, overwork, worry and anger, exhausting chronic and acute diseases, misfortune, alcoholism, mental shock, violent emotions, crisis of puberty, sexual and other excesses and platonic love. Where heredity is present, the trouble begins early in life and runs a more severe course. Attention was directed to the two hundred observations made by Bidon, who holds that neurasthenia is etiologically allied to degeneracy. A study of the posterity of neurasthenics strongly points toward this view. Grandholm regards the too extensive social intercourse of the world as the principal cause of neurasthenia. Gattel has collected one hundred observations and claims that the sexual

as a potent cause, and Pleury of platonic love. Unrequited love and otherwise unfortunate love affairs may be safely added to the list. Biernacki found that fresh blood of neurasthenics coagulated slowly with a small amount of fibrin; the blood is otherwise normal. This sedimentation anomaly is present in most patients, and depends on the small amount of fibrinogen; its constancy speaks for its primary nature. Charcot states that gout, diabetes, obesity and chronic rheumatism, on account of their frequency in neurasthenic families, point to a disturbance of the processes of oxidation. Functional neuroses follow psychic excitement, which speak little for their primary nature. None of the theories that have been so far advanced to explain Beard's disease have been satisfactory. The toxic origin of neurasthenia can not be denied. Priantaphykides reports fifty undoubted cases of malaria where neurasthenia is the only symptom. Grave cases follow light attacks of influenza. Is fatigue a phenomenon primarily dynamic or toxic? It is possible that the toxin only acts as an irritant to the nerve-cell, exciting it to over-activity. Fatigue and chemical phenomena accompanying it are in proportion to the amount of nerve energy the muscle receives from its centers. A study of walking and bicycling riding points to it. In riding or walking up hill, where volition works against the force of gravity, fatigue is more evident. Functional neuroses are probably not primary diseases of the central nervous system, but a secondary symptom-complex in consequence of the activity of products of primary oxidation disturbance of the nervous system.

Lehigh Valley Medical Association.

Mid-Winter Session, Allentown, Pa., Jan. 25, 1900.

OBSTETRICS IN LAST HALF-CENTURY.

DR. A. H. HALBERSTADT, Pottsville, read a paper on "Some Reminiscences of the Last Half-Century," alluding to the changes since the time of Meigs, Hodge and others in the practice of obstetrics. He thinks the pre-eminent standing of these gentlemen elevated the chairs of obstetrics in the colleges, their reputation being national; the end of the greatest epoch in this art ended with their deaths. The regeneration of gynecology by Sims led a stampede from obstetrics that still continues. Every manipulation in obstetrics is surgical and no necessity exists for the division of labor based on the use of the knife. The principal advances are asepsis and the use of anesthesia; the former, except in more intelligent detail, is not new; the latter is the greatest boon to parturient women.

ELECTRICITY INTERNALLY TO THE STOMACH.

DR. BOARDMAN REED, Philadelphia, read a paper on this topic. He considers this easy of employment, and exhibited the apparatus which he employed. He has obtained excellent results in cases otherwise intractable. Certain patients require stimulation, and thus he obtains it. Much is necessary in the way of diet and care of the general system.

THE PHYSICIAN AND THE LABORATORY.

DR. C. KNAPP, Wyoming, read a paper on the "Value of the Laboratory to the Physician." He pointed out that it greatly aids in diagnosis and proper treatment of disease, and instanced the X-ray, pathology, bacteria culture, microscopic work, histology, photography. Observation now takes the place of theory, thus leaving less to empiricism in practice. Every practitioner should be thus armed, and his offices should be fitted to enable him to do the work promptly and satisfactorily. He described the proper fitting of a laboratory, and urged the young physician to work earnestly, carefully and make himself sure as to what he obtained. Above all, the note-book should have a place and record everything observed.

QUADRUPLE AMPUTATIONS.

DR. J. C. BIDDLE, Fountain Spring, read a paper on "Quadruple Amputations." He traced the history of surgery from the earliest times, showing the great advances at present, due to the knowledge of the use of anesthesia, asepsis, the ligature, and prevention of hemorrhage. We must not be in too great haste to operate, nor object to do so when it is necessary. In amputations, we must have enough skin, muscle and fascia to cover the bone, thus preventing retraction or conical stump. He has performed one quadruple amputation, removing both feet and both hands in the case of a man who had lain all night deep in the snow till the frost had caused the death of these members; this man made a good recovery. But one other such case is on record. He does not favor the drainage-tube, and regards it very important that we should make early arrangements for the wearing of an artificial limb, and not wait months or even a year, thus causing the patient to be awkward in its use. He prefers chloroform, and for ligatures the silkworm gut.

DR. W. J. HEARN, Philadelphia, agreed with the speaker, but prefers the drainage-tube in amputations, as indispensable.

DR. W. L. ESTES, Bethlehem, said modern methods make conservation more advisable than formerly, so it is important, if there is the least doubt, to employ careful hemostatic and antiseptic dressing and wait hours, if best, before amputating; there is no need, in the majority of cases, for immediate operation. During the early stages of acute anemia, ordinarily called shock, we should not operate. Let the heart regain its tone somewhat. He uses tourniquets for bleeding, and places them on the crushed surfaces or just above the torn skin. Drainage is imperatively necessary, especially for infected wounds.

DR. J. B. ROBERTS, Philadelphia, called attention to the necessity of applying means to check hemorrhage at the locality injured, not far above, as is often done by the improperly taught policemen, who cause much damage by the tight bands which they apply far above on the injured limb. He believes it is a mistake to operate in a hurry. There is no need of it. He stops hemorrhage, obtains asepsis, and then waits for reaction.

DR. H. AUGUSTUS WILSON, Philadelphia, directed attention to the need of the early use of artificial limbs, not delaying for months, which often causes great awkwardness and difficulty in their use. Also, this delay causes wasting by non-use of the limb, and pain when the artificial limb is placed. Surgeons must prescribe these limbs with as much care as they should do everything else.

Toronto Clinical Society.

Stated Meeting, Toronto, Ont., Jan. 4, 1900.

KNITTING NEEDLE IN PELVIS.

Dr. George A. Peters showed one-half of a knitting needle which he had extracted from the pelvic cavity of a very stout woman. The patient had sat down upon her knitting, one needle passing into the buttock half its length and breaking off. In its passage into the right buttock it had grazed the tuber ischii of that side. On first examination the needle could not be felt, but a week later the surgeon examined vaginally and found the foreign body on the lateral plane of the pelvis lying on the tuber ischii. It was removed with a pair of forceps through a vaginal incision.

SYPHILITIC NECROSIS OF CRANIUM.

Dr. William Oldright showed a man, aged 54 years, with a large syphilitic ulceration on the vertex about four inches in diameter and of irregular outline. Twenty-five years ago this man had become syphilized and at that time was very much addicted to alcohol. At the onset of the present lesion he suffered from headache, but no other symptom. About two years ago he had a fall and cut the scalp, which never healed very well; and in August, 1898, it commenced to discharge. By September, 1899, there was a large ulceration and the bone beneath was corrugated and black. Pulsation from the brain was discernible through the pus. Operation was performed late in September, 1899, cutting through both tables, 2 by 2½ inches having been removed. This was under anesthesia, but since that time portions have been removed without it, the only discomfort recorded being some buzzing in the ears. At first the patient was put on iodid of potash, 10 gr. three times a day gradually increased until at the present time he is taking 35 gr. three times a day. Treatment is suspended at intervals of two weeks when the bichlorid is administered.

CARDIAC ANEURYSM.

Dr. W. B. Thistle presented a specimen, with the history of the case, from a married woman, aged 32 years, who had never been pregnant, nor syphilized, although the husband was drunken and worthless. She was admitted to the hospital with weakness, shortness of breath, and marked pallor, some edema below the eyes; pulse rapid but regular. Examination of the heart revealed a double aortic murmur traceable up into the neck and down along the sternum. Water hammer pulse was

very distinct, also throbbing of the great vessels of the neck. There was also capillary pulsation very distinctly seen in the patient's finger nails. The apex was displaced somewhat to the left. Later on there appeared a systolic murmur at the apex, traceable to the left, and still later a presystolic one accompanied by a very pronounced thrill; also a pericardial friction sound. First examination of the urine revealed no albumin, but later on it was found in abundance. The diagnosis was malignant endocarditis. Death occurred from uremic convulsions, after seven weeks in the hospital. At the autopsy, the aneurysm was found to be in the ventricular septum, extending up into the auricular, so that it was partly in both septa. It was two inches in length and an inch in breadth. The clot turned out left a smooth wall with calcareous deposit about the opening. The mitral valve showed nothing abnormal, contrary to expectations.

ENDOCARDITIS OF RIGHT HEART.

DR. W. B. THISTLE also showed this specimen. The case was one of chronic endocarditis, occurring in a rheumatic girl, aged 12 years. It was of interest because all four valves showed marked changes; very pronounced mitral and just as pronounced tricupsid; with distinct vegetations on the aortic and also on the pulmonary valve; and, particularly interesting when the specimen was recent, there seemed to be a little tuft on each segment of the pulmonary valve, very distinct. This is an extremely rare condition. Some authors say you never get endocarditis affecting the pulmonary valve.

TUBERCULAR TESTICLE.

DR. H. A. BRUCE showed this specimen, the condition beginning in the epididymis, with a sinus opening through the scrotum, discharging pus. The patient was a young married man of 26 years, with some enlargement of both testicles for about a year, although the sinus only existed about four weeks. He also had one on the other side. The left one led to the globus major and the right to the globus minor of the corresponding side. The disease was in both testicles. Examination per rectum showed the seminal vesicle of the left side enlarged. The left testicle was removed entire, and as the patient was particularly anxious that some portion of one or the other be left, only the vas and epididymis of the right were removed. Later on this portion will have to be removed.

EXTRAORDINARY CASE OF CANCER.

DR. WM. BRITTON related the history of this case and Dr. Anderson described the pathologic specimen, from a corpulent woman of 57 years. She first came under Dr. Britton's care in July, 1899, with edema of the left ankle and a portion of the leg as far as the calf. In the absence of local causes for this, pressure was suspected higher up and a vaginal examination revealed a hard nodular mass completely filling the pelvis. A portion of the uterus could not be made out at all, nor either ovary or tube. With the finger in the rectum the tumor could be pressed forward so that the intestine was patent to a certain extent. An exploratory incision was performed and a large amount of ascitic fluid spouted out; the omentum was thickened and very much congested. The tumor was adherent in many places. As it was not thought advisable to proceed any further, the wound was stitched up. Five days later oozing of ascitic fluid began from the upper part of the incision and from the stitch openings. This continued about two weeks, when healing took place by granulation. During the last week of life vomiting was almost incessant. At the autopsy it was found that the tumor had nothing to do with the uterus, but arose from the left ovary. The whole peritoneum, both parietal and that covering the viscera, was studded with little elevations about the size of a millet seed, covering the broad ligaments, the whole surface of the tumor superiorly, and every portion of the peritoneum. They were most numerous over the stomach, mesentery, and colon. In front of the pylorus there was a great deal of thickening of the peritoneum, while posterior to it there was a nodule the size of a walnut, coarse and grayish in structure, having the appearance of scirrhous cancer. Macroscopically the condition was thought to be due to tuberculosis, but on examination with the microscope it turned out to be a papillomatous cyst of the ovary, the condition being shown microscopically in both ovaries.

ECLAMPSIA.

DR. K. MCILWRAITH reported two cases of eclampsia, in primiparæ, aged 19 and 24 years respectively, in whom treatment by morphia, calomel and salines proved effectual.

DR. W. H. PEPLER lauded veratrum viride, which had proved an excellent remedy in his hands, and condemned pilocarpin, as death had resulted in the only case in which he employed it.

DR. WM. BRITTON thought that venesection should not be overlooked in sthenic cases.

Cincinnati Academy of Medicine.

Jan. 15, 1900.

FRACTURE AT BASE OF SKULL; RUPTURE OF MIDDLE MENINGEAL ARTERY; RECOVERY.

DR. S. P. KRAMER presented a patient, first seen on Nov. 3, 1899, a few hours after he had fallen down a flight of iron steps. He was semicomatose, with slow pulse, and semiparesis of the left side, especially of the arm and leg. The tongue was deviated toward the left side. The pupils were sluggish, with no difference in size. He did not respond to sound. In addition to this there were hemorrhages into the conjunctivæ, and also from both nostrils, which increased in the following twenty-four hours, and were considerable in quantity. There was also hemorrhage from the ear. The eyes were very much infiltrated. A diagnosis of fracture of the base of the skull was made, together with rupture of the middle meningeal artery, chiefly on account of the paresis. On November 5 the skull was laid bare and a badly comminuted fracture found, involving the squamous portion of the temporal bone, also the parietal. A rupture of the middle meningeal artery was also discovered. Just above the dura was a large clot of blood. Opposite this the dura was cut and torn, and from the aperture a small portion of the cortical substance was lost. After everything had been thoroughly cleansed, the dura was sutured and a drain inserted. On the day after the operation he had an attack of Jacksonian epilepsy, which affected the left eye, particularly the muscles of the neck, face and eyes. On the day following he had another similar attack. He came to the conclusion that these were due to iodoform poisoning, as he had used an iodoform gauze drain, that was discontinued, and a plain gauze one substituted. No other attacks came on. The recovery from that time was interrupted. There was still, as shown by Dr. Kramer, a small stitch-hole abscess in the scalp, and there is also now remaining a little deviation of the tongue to the left.

AORTIC DISEASE COMPLICATING GONORRHEA.

DR. GILBERT L. BAILEY presented a patient who had an attack of gonorrhea seven years ago. This was followed by a stricture of the urethra, which stricture was cut. Following this he had a lymphangitis involving the left leg, and he has suffered from this condition ever since. He has also suffered from phlebitis. The left leg was larger than the right. He has an aortic murmur due to an endocarditis occurring at the time of the attack, also probably of gonorrheal origin. There is considerable hyperplasia of the subcutaneous connective tissue, resulting in great thickening of the limb.

LOCOMOTOR ATAXIA: ETIOLOGY.

DR. D. I. WOLFSTEIN, in a paper on this topic, gave an exhaustive review of all the causes that have been believed to have caused this disease, his own personal opinion inclining him to the view that syphilis is not so important as writers have given us reason to believe.

DR. PHILIP ZENNER upheld the view of previous syphilis. He said that it could not be borne too strongly in mind that syphilis is often introduced into the system through unknown channels and not recognized at the time by either patient or physician. Certainly lesions of syphilis have been found when no history of syphilis could ever be obtained. Not infrequently there is great difficulty in obtaining a history of the disease even when the lesions are typical. He mentioned several cases in support of this, that had come to his attention very recently. A patient had been sent to him by his family physician. Examination revealed locomotor ataxia, but no marks of previous syphilis could be found, even after the closest examination, and the patient absolutely denied infection. He saw the family physician the next day and was informed that he, the family physician, had treated the man for constitutional syphilis, his wife for constitutional syphilis; that the latter had had a number of abortions, and that all the children who had come into the world had died of hereditary syphilis. Had he not seen

the family physician he would have entered the case on his books as one of locomotor ataxia without previous syphilis.

A few months ago he saw a woman with paresis. He sent for her husband and inquired if he had ever had syphilis, but it was absolutely denied. The man, on leaving the office, casually announced that he was going to see his oculist. Calling up the latter he found that the husband was suffering from atrophy of the optic nerve. On inquiring from the family physician he found that the latter had treated the man for constitutional syphilis. Since that time the man has developed other symptoms of tabes.

In another case of a woman with locomotor ataxia, he sent for the husband and inquired for syphilis. Here it was also denied. He learned from the wife that she had had many miscarriages, and that a few months after marriage she had developed an eruption covering the body. Her husband has since developed paresis.

Many other similar cases have occurred in his practice, and he always expects to find syphilis in locomotor ataxia, and is not very often disappointed.

DR. F. W. LANGDON said that while he does not believe that syphilis is always the cause of tabes, he believes it is a very important antecedent in very many cases. He has had a number of cases of tabes in which no syphilis has been present. A very prominent etiologic factor is the strain put on the sensory neurons. The more highly organized the individual or race, the more delicate the sensory system and the more liable the latter is to give way under strain. The essayist mentioned how uncommon tabes is among the lower races of man, though syphilis is far more common among them than in civilized communities. It would seem from this one point alone that there is something else lacking as an underlying factor, and he is inclined to put it to this strain on a sensory mechanism, already overly delicate. He does not regard it as a great mystery that, with the progress of atrophy of the optic nerve, the disease tabes is frequently checked. With the progress of optic atrophy, man is necessarily compelled to be less and less active, and he may lead an almost vegetative existence. In this way the strain is taken off the sensory neurons in general, and that, in his judgment, is responsible for the cessation of the progress of the disease. Antisyphilitic treatment, while often advocated in tabes, in most cases, so far from doing good, caused actual harm; for tabes is not a gummatous disease.

DR. JOSEPH EICHBERG said that, in reference to the causation of locomotor ataxia, the neuron theory seems to be plausible, because the changes which take place in the body of the nerve-cell show that degeneration frequently occurs from over-stimulation of the neuron. The fact that Fournier, in 5000 cases of syphilis, was able to find 11 per cent. with locomotor ataxia, is an argument that does not admit of much discussion. It can not be said that when 11 per cent. of 5000 patients with syphilis have tabes, these are accidental cases, nor will it do, on the other hand, to say that tabes is always dependent on syphilis. The same sort of reasoning will apply to every infectious disease. It does not follow, because out of a number of individuals only a limited number show the infection, that the reputed cause of the disease is not operative in the manner stated. The fact that an individual may have had locomotor ataxia and have subsequently acquired a syphilitic sore does not disprove the fact that he had a primary sore before the tabes developed, because reinfection is not an unknown thing in the history of that disease. He believes that the whole pathology of the disease is as yet in chaos; while the lesion is known, the existence of the neuron and its liability to undergo degenerative changes, the result of nutritional disturbances, is indisputable, though the exact manner in which these changes are brought about is purely speculative.

DR. J. W. ROWE believes that the theory of over-stimulation of the neuron, followed by exhaustion, fits well with the etiologic features named: that this exhaustion can be produced by excesses in alcohol or in venery, from overwork, or from the presence of an exhausting disease such as syphilis. In practical medicine we are accustomed to at least confirm our diagnosis from the effects of our therapeutics, as for instance the results of iodid of potassium in syphilis and quinin in malaria: the best neurologists in the country admit that the one therapeutic measure which has any possible chance of staying the progress of tabes is absolute, unqualified rest. By this latter method of treatment it might be possible to confirm the idea that exhaustion is the cause of tabes.

OCULAR SYMPTOMS OF TABES.

DR. LOUIS STRICKER read a paper on this subject. He called attention to the variety of symptoms on the part of the ocular apparatus that may be present in this disease: the Argyll-Robertson pupil, paralysis of the extrinsic muscles attended with strabismus and ptosis, and lastly the peculiar primary atrophy of the optic nerve, which latter, when occurring early in the disease, is curiously enough frequently followed by a cessation in the progress of the tabes.

Chicago Laryngological and Climatological Society.

Dec. 29, 1899.

HOME TREATMENT OF CONSUMPTION.

DR. JOHN A. ROBISON read a paper on this subject, and in it arraigned the profession for neglecting to place their home patients under the proper conditions for cure. He outlined the home treatment to consist essentially of the open-air method, and a minute supervision of the patient's daily hygienic and dietetic habits.

DR. O. T. FREER said that exercise, when fever exists, will increase this, and that the rest treatment is then indicated. The fever is not only due to the absorption of tubercle toxins, but to pneumonic and bronchitic inflammations. It is better to give less food than more than the stomach can take care of, as these patients are very apt to have indigestion. It is especially unwise to give fluid fats, although solid fats are indicated, as the muscles waste less than the fat of the body, but fluid ones, such as cod-liver oil, increase indigestion, perhaps by covering the solid particles of food with an oily coating. Of the fluid fats cream is the best. It is now the fashion to prescribe milk generously, but he does not think it wise to overdo this. He believes a dry diet is preferable. The fresh-air treatment is a matter of great importance, as it means the absence of bacteria; the air of rooms has more bacteria than the air of the streets.

DR. EDWIN KLEBS said drug and fat treatments come and go, but the individualizing of cases is neglected. The paper impressed him with the fact that he does not make a difference in the treatment of different cases. There is an enormous difference in the indications for the treatment of various patients. The fevers differ; the capacity for exercise differs. Dr. Freer spoke of putting the patient to bed. There has been a great controversy on the other side of the water on the rest and exercise question, and the war has been bitter. Dr. Klebs, from four years' sanitarium practice abroad and home, is of the opinion that patients do better when you can keep them out of bed, keeping the windows open when they are bed-ridden. The fever can be reduced and the psychic effect is good.

DR. J. A. ROBISON recommended that the windows of the bedroom be kept open, but he went a step further, and would have some patients practically sleep out of doors without disastrous results. They can build little balconies and sit wrapped up in steamer chairs, kept warm with hot water-bottles for seven hours a day with good results, the patients being improved but not cured. We can not send many patients away, and sometimes it is not desirable. When we keep them at home we know what they are doing. The dietetic and hydrotherapeutic treatments seem simple, but are hard to put into practice with home patients.

DR. KLEBS does not agree with Dr. Robison that the patients need not be seen oftener than once a week, for it is better to keep in contact with them. He has followed in this method a plan which works well in the city: He has a nurse trained in dietetics and hydrotherapy, who visits the patient and sees that the instructions are carried out. They get the patients to work, and keep them cheered up, which is very important.

DR. W. E. CASSELBERRY said that modern sanitarians consider fever as a prohibitive of exercise, and yet western experience opposes the rest treatment. He has seen detrimental effects follow exercise at a temperature from 99 to 101.5 F. Exercise increases the temperature from .5 to .4 and .6 of a degree, but this does no harm. He is not in favor of putting the patient to bed; the mental effect is bad. He has not seen any mention

made of walking as an exercise, which is a very valuable form and may be called the poor man's exercise; it is easily regulated, and the amount should be graduated, commencing with short walks and increasing their length gradually until the patient walks two or three miles a day; while walking he should take moderate inspiratory exercise, holding the breath for several steps. It is a great mistake to tell such patients to take a full bath; as many of them do not know what that means. He has them stand in a bathtub filled with water at a temperature of 50 to 60 F., when robust; if not robust he has them commence at a higher temperature, 70 to 80 F., and gradually reduce it. The temperature of the bath-room should not be less than 70 to 80 F. The bath should not last over thirty seconds, the patient standing in the tub and rubbing the water over himself quietly, following this with a brisk rubbing with a crash towel, the friction and motion having a stimulating and tonic effect.

In regard to feeding, he raised the question as to the use of alcohol—not as a food but as a stomachic; as an appetizer before meals. He thinks most patients can digest more food than their desire for food tempts them to take, unless it is in the advanced cases; and as a tonic he is accustomed to allow them wine or beer with their meals. Consumptives should never wear heavy underwear. Too heavy is debilitating, and provocative of catching cold.

DR. J. A. ROBISON, in closing the discussion, said that his paper was merely suggestive, but he hoped the profession would adopt a more systematic method of home treatment.

CLIMATIC TREATMENT OF TUBERCULAR LARYNGITIS.

DR. E. F. INGALS opened the discussion on this topic by saying the climatic treatment has not been as satisfactory as in pulmonary tuberculosis. He has often thought it necessary to restrain patients, with tubercular laryngitis, in their journeyings. He has seen some who were injured by sojourning in high altitudes, but others who were not, nor by hot or dry or dusty climates. In fact, some seemed to improve, but he believes the improvement was due to a betterment in the general condition of the patient. As a rule he advises patients to keep away from the high altitudes, and urges the low ones, preferably the warm and dry. He would not send cases of tubercular laryngitis to Arizona, as it is too dusty. They are better in the mild climate of the South than the vigorous one of the North. Some would be better in a warm, damp climate. While a change of climate in the early stage often gives improvement, he believes it is generally due to that of the lung troubles.

DR. W. E. CASSELBERY said his experience was confined principally to nine years spent in the Rocky Mountains, from Las Vegas, Albuquerque, Phoenix, Cheyenne and the borders of Colorado. The altitude is high, the climate dry, with abundance of sunshine and ozone. The sun is hotter here on account of the rarity of the atmosphere, and it is cooler in the shade. The winds vary very much, according to the particular spot. Denver, Estes Park, etc., are not very windy, nor so constantly dust-laden as are Phoenix, Albuquerque, etc. The outdoor life there is a great feature in the cure.

He said that Dr. Solly, in a report to the Pan-American Medical Congress, some years ago, tabulated 45 cases of tubercular laryngitis. In 25 the lungs were infiltrated, 20 had laryngeal ulcerations. Of his 25 infiltrated cases 17 lived an average of fifteen years—8 became worse and died, these averaging four years. In the 20 ulcerated cases, 5 were alive at the end of 8½ years, and 15 died or were worse at the end of 2½ years. Many died of pulmonary tuberculosis. There was, therefore, 64 per cent. of improvement or arrest; none of the patients died in the early stages of the disease.

Dr. Levy of Denver had also reported 42 cases in which 12 improved. One was cured, 2 improved after four years, 5 died and 7 were improving at the time of the report.

Dr. C. expressed it as his conviction, from personal experience and that of others, that there is nothing inimical to laryngeal tuberculosis in the climate of Colorado and New Mexico. He does not think high altitudes any contraindication, but that dust is, especially in alkaline regions. He does not see any reason for thinking altitude per se is inimical. This idea prevails among the profession, but the majority of cases do not do well anywhere. He does not see any direct curative agency in any climate, and thinks the good results secured are secondary in their nature.

DR. EDWIN KLEBS said he had observed the influence of climate in cases of tubercular laryngitis in Denver; the Alps; the Black Forest; Falkenstein; in Davos; Phoenix, Colorado; Arizona, and North Carolina. He believes that when climate benefits the pulmonary tuberculosis it benefits the tubercular laryngitis; but climate is of secondary importance, as none is specific; it is only an adjunct.

Omaha Medical Society.

Jan. 23, 1900.

THREE ABNORMAL OBSTETRIC CASES.

DR. W. O. BRIDGES presented a report on this subject. Two were cases of shoulder presentation, and in neither was the head impacted in the pelvic outlet. He was able to convert each, by bimanual manipulation, into a cephalic presentation and deliver, one with forceps and the other without. The most interesting feature of one was the fact that he could get the head over the neck, but it would slip away and be re-converted into a shoulder presentation with every new pain. To prevent this he resorted to profound anesthesia, then again secured the head in proper place and held it firmly until it was well engaged. The third case was one of albuminuria, with marked accumulation of liquor amnii, still further complicated by a central implantation of the placenta. When he was first called, he was unable to prove pregnancy present: he could get no fetal sounds; there was very great distension from fluid; edema and general anasarca were present and labor was said to be on; the cervix could not be reached at all. Later on, after some general treatment, he found a great degree of pain, no dilatation of the cervix; the pain continuous and convulsions on examination. He decided on rapid dilatation, which was accomplished in the midst of more convulsions. He found the placenta implanted centrally but not low down; this allowed him to detach, without much loss of blood. He then went through the placenta and ruptured the membranes, securing the largest flow of liquor he ever saw: it soaked the bed and ran through to the floor. By reason of the place of attachment of the placenta, he did not have the usual hemorrhage, though it was a central implantation. He therefore decided to apply the forceps instead of performing podalic version. This he was able to do at once, having a dead child. The mother never rallied, and died within an hour.

Dr. Bridges spoke of the rarity of convulsions with placenta previa, and of the very great danger involved. While it is the usual custom to perform podalic version, he was able to secure complete delivery with the forceps without loss of any material amount of blood.

HYDROCELE.

DR. B. B. DAVIS read a paper laying great stres on the evil features of the injection method of treatment of hydrocele. He spoke of it only to condemn it as really the most radical method while posing for the most conservative one. He has used the Volkmann method repeatedly, the open operation with free drainage, but prefers the Bergmann, with free incision and removal of part of the tunica, and the closure of the walls without any drainage.

The Johns Hopkins Medical Society.

Baltimore, Md., Jan. 22, 1900.

ADHERENT APPENDIX.

DR. H. A. KELLY reported a new method which he devised for dealing with an adherent appendix. He has found this condition in about twenty-five among the last 200 cases of abdominal section he has performed. His method consists in dividing the appendix at its base, then drawing out the mucous coat and separating beyond through the attached peritoneal covering. He explained his mode of dealing with the ureter in cases where it was involved in the tumor mass and had to be exsected, sometimes uniting the cut extremities or bringing the end to the bladder and making a new connection with that organ.

FIBROID UTERI.

In removing large fibroid uteri involving the cervix, he has found it difficult to reach the vessels for ligation, and under these circumstances he splits right through the mass from top to bottom, and thus secures access to the vessel.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION.
61 MARKET STREET, - CHICAGO.

SATURDAY, FEBRUARY 10, 1900.

THE DIAGNOSIS OF SMALLPOX.

In the presence of an epidemic the diagnosis of smallpox may in general be unattended with difficulty, but when the disease occurs only in sporadic instances doubt may often reasonably arise, and mistake may not always be avoidable. That error should be made at the present day, in the diagnosis, ought not be a matter for harsh criticism when it is considered that smallpox is comparatively rare, and many, particularly among more recent, practitioners have never had the opportunity of seeing a case of this disease. The action of the Philadelphia authorities recently, in response to an appeal by the County Medical Society, in opening the wards of the Municipal Hospital for Contagious Diseases to the instruction of undergraduates of the various medical schools, under the supervision of the physician in chief is, therefore, a matter for sincere congratulation, and is a credit to the intelligence and the public spirit of those with whom lay the power to withhold or to grant the desired concession.

Through the beneficent influence of vaccination, smallpox is rare, even in the large cities of the world, so that under the most favorable circumstances many practitioners may pass through a long and busy career without seeing a single case, to say nothing of the lack of clinical demonstration during the course of collegiate medical instruction. It is, therefore, as has been already stated, not surprising that cases of smallpox should be occasionally overlooked, or mistaken for other disease, and vice versa. The condition could not well be otherwise. It is worthy of mention, further, that by reason of the wide diffusion of vaccination even when the disease occurs, it does not always present the classic clinical picture. The frightful epidemics of the past are no longer met with in civilized communities, and both sporadic cases and endemics and epidemics often present a degree of mildness that renders the confounding of smallpox with other diseases exceedingly easy.

In a typical case, after a period of incubation of about twelve days, the attack usually sets in with a rigor or a succession of chills. Children may exhibit convulsions, delirium or coma. The temperature at once rises to a considerable elevation, and the pulse and respiration are accelerated. Headache and pain in the back and extremities are often present, and the physical prostration may be profound. The appetite is lost, thirst is increased, and constipation usually exists; vomiting or retching, with epigastric pain, is common. Catarrhal symptoms may also be present. On the first, second or third day a rash may appear, sometimes diffuse and macular, like that of measles, at other times scarlatiniform and confined to limited portions of the body, particularly the hypogastric and the axillary regions; at still other times a diffuse red eruption appears on the trunk and the extremities within the first or second day, being soon followed by the lesions of hemorrhagic smallpox. Generally on the third day—sometimes earlier, sometimes later—the typical exanthem of variola makes its appearance, often earliest on exposed parts of the body, as the face and the extremities. For a short time it is macular, but it soon becomes papular, then vesicular, and finally pustular, and it exhibits throughout a peculiar shot-like hardness. As a rule, a central depression or umbilication is present, and the lesion is surrounded by an area of redness. The pock is constituted of a number of compartments or loculi, so that its contents are not wholly discharged and it does not collapse on puncture. The mucous membranes may be the seat of greyish or whitish elevated spots that soon become transformed into excoriations. The pustules undergo desiccation or rupture on about the eighth or the ninth day. If the true skin has not been involved, the crusts fall off about the fifteenth or the sixteenth day, leaving purplish-red stains; otherwise sloughing takes place on the eighteenth or the nineteenth day, leaving granulating surfaces that undergo cicatrization and are at first brownish, but ultimately become white. The initial fever subsides shortly after the eruption has appeared, and the constitutional symptoms moderate at the same time. At the end of three or four days, however, with the onset of pustulation, the febrile manifestations are renewed.

The disease in the differentiation between which and smallpox the greatest difficulty is likely to be encountered is chicken-pox. In fact, there was a time when the two diseases were considered identical, but there is abundant and conclusive evidence against this view. In the first place, typical chicken-pox may occur in those who have had smallpox or have been vaccinated; and an attack of the disease, while it confers immunity to chicken-pox, does not protect in the slightest against smallpox or vaccinia. Then, each disease gives rise only to cases of its kind. Further, the eruption of chicken-pox begins as a series of small, slightly acuminated red spots, which at first disappear on pressure. In a few hours, these become transformed into round or oval, transparent, tense vesicles, about as large as split peas. These sometimes have a red base, although they are at times seated on a colorless surface. They appear most commonly and in greatest number on the trunk and the covered portions of the body; usually they are superficial, have no thickened floor, are generally not umbilicated, do not present a number of loculi, and when pricked collapse almost completely; their fluid contents become opalescent, but not purulent; they begin to undergo desiccation in from twelve to twenty-four hours; thin brownish-yellow scabs form, which in a few days crumble and fall away, leaving reddened

pigmented spots, and sometimes transient and superficial cicatrices. In contradistinction to the eruption of smallpox, that of chicken-pox generally appears in successive crops in the course of three or four days or a week, and in a single case all the different phases of the eruption may be present at the same time. The constitutional symptoms generally are exceedingly mild, and the temperature does not fall when the eruption appears, as it does in smallpox. The disease occurs almost exclusively in children, although many instances have been observed in adults. In this connection it should be borne in mind that smallpox also was largely a disease of children until the beneficent effects of vaccination almost revolutionized the incidence of the disease.

The primary eruption of smallpox may resemble that of measles, but the latter usually appears the later, and with its appearance the temperature, which originally had been high and had declined, again rises, while with the appearance of the papules of the eruption proper of smallpox the temperature declines. The eruption of measles further remains essentially papular throughout, while that of smallpox becomes successively vesicular and pustular. Catarrhal symptoms are earlier and usually more pronounced in measles than in smallpox. The latter is the longer disease.

There may be a close resemblance between typhus fever and smallpox at the beginning of each disease, but the eruption of the latter appears a day or two later than that of the former, usually avoids the face, does not become pustular, is often in part petechial, and the temperature does not decline with its appearance. The total duration of typhus fever is considerably less than that of smallpox.

In the headache, the pain in the back and the extremities, and the febrile symptoms, typhoid fever may at first be suggested in a case of smallpox. Epistaxis and diarrhea are, however, likely to be wanting in the latter, the onset of which is usually abrupt, while that of typhoid fever is insidious and gradual. Apart from the marked differences in the character and the course of the eruption, that of smallpox appears earlier than that of typhoid fever, and its appearance is attended with decline in temperature and subsidence of the other febrile symptoms. The diazo reaction of the urine and the Gruber-Widal reaction of the blood are peculiar to typhoid fever, and the subsequent course of the two diseases is sufficiently distinct to prevent mistake.

The scarlatiniform rash, sometimes present early in cases of smallpox, and which may be suggestive of scarlet fever, is generally replaced on the third or the fourth day by papules, which in turn become vesicles and pustules. Rupture and desiccation occur in smallpox, and desquamation often in large flakes or sheets in scarlet fever. Further, sore throat with deposits on the tonsils or in the pharynx, enlarged cervical or submaxillary lymphatic glands, and a "strawberry tongue," are peculiar to scarlet fever; whereas in smallpox headache and backache are the more conspicuous.

The rash of erysipelas differs from the early roseola of smallpox in being circumscribed and indurated, and not succeeded by an eruption of papules, vesicles, and pustules, but terminating in desquamation, sometimes after the formation of blebs.

Contagious impetigo is an afebrile cutaneous disorder, attended from the onset with vesico-pustules on apparently healthy skin. The lesion is large, flat, and superficial, and on disappearing leaves no scar. The disease is communicated only by contact or direct inoculation, and it may spread by auto-inoculation.

The pustular syphilide may bear a close resemblance to the eruption of smallpox, but it occurs in crops, is more superficial, is less indurated, is usually free from umbilication, exhibits no tendency to ulceration, is unattended with dermatitis, and is usually associated with a coppery discoloration of the skin, and other symptoms of syphilis, particularly granular enlargement. Much the same points of differentiation will aid in the separation of smallpox and other syphilitic eruptions.

Smallpox and such disorders as cerebrospinal meningitis, influenza, rötheln, and various erythematous conditions of the skin may for a time be confounded, but a careful scrutiny of the patient, a consideration of its associations, and the further development of the clinical picture, will in almost all cases clear up any doubt that there may have been in the diagnosis. A knowledge of the existence of other cases of smallpox, a history of exposure to infection and the absence of evidence of successful vaccination and revaccination may be important factors in reaching a decision. Error can only be avoided, however, by being constantly on one's guard and always prepared for the unexpected and the expected alike.

MULTIPLE AMYLOID TUMORS OF UPPER AIR-PASSAGES.

So-called amyloid tumors occur most frequently in the conjunctiva. They are in reality for the most part local amyloid infiltrations of granulation and hyperplastic connective tissue. In some cases the amyloid substance is present in small masses, in others larger nodules are formed that consist almost exclusively of amyloid material, and acquire a wooden hardness. Tumor-like accumulations of amyloid also develop more independently and without any evident association with inflammatory processes.

Next in frequency are amyloid tumors of the upper air-passages. These peculiar pathologic products belong to the more infrequent formations. Instances of occurrence in the trachea and the larynx are described by Burow, Balser, Kraus and Zeigler; partly solitary, partly multiple masses or tumors, sessile or pedunculated, were present in the submucous tissue of the parts mentioned; in some cases amyloid accumulations also occurred in the tongue. Recently Manasse[1] recorded two instructive cases of this disease. In the first there was

[1] Virchow's Archiv, 1900, vol. clix, p. 117.

found a large flat tumor, 3.2 cm. long and 1.2 cm. broad, situated on the posterior wall of the larynx and the trachea, and scattered about were numerous smaller growths, at times so closely aggregated as to resemble a more diffuse amyloid infiltration. The patient was a man, 63 years old, who died from peritonitis caused by the perforation of a duodenal ulcer. The masses were nodular, transparent and covered by an intact mucous membrane; on the application of iodin, the surface assumed a deep brown color; and gentian violet followed by glycerin and acetic acid gave the amyloid material a red color. A peculiar feature in connection with some amyloid growths in this situation is the presence of bone and of hyaline cartilage. Manasse believes that the islands of cartilage in his case were produced by a process of metaplasia in the connective tissue. The perichondral and parachondral connective tissue, in which the formation of amyloid masses takes place, is regarded as capable of thus forming both cartilage and bone. From the histologic description of Manasse it appears that in this case the deposition of amyloid substance took place in the preformed normal tissue.

Manasse's second case concerns a man, aged 50, who for some time complained of difficulty in swallowing and breathing. Amyloid nodules were found on the soft palate, both tonsils and the left aryepiglottic ligament. The last nodule was pedunculated and moved up and down with the movements of respiration; when snared off, it was found to be 2.5 cm. long and 1 to 1.5 cm. thick. The patient remained free from return of the growths for one year after their removal; after that time he disappeared from observation. In this case the localization of the growths is peculiar, especially as regards the masses on the palate and the tonsils. The amyloid substance had developed in a cellular substratum of a decidedly sarcomatoid appearance, being composed of small, spindle-shaped cells with but little intercellular material. The amount of amyloid in different parts of the nodules varied greatly, being in places visible to the naked eye, while in others only the microscopic examination could reveal its presence. The amyloid material made its appearance first about the periphery of the tumors. Bone and cartilage were absent in this case.

While most authors refuse to regard local amyloid growths as the result of secondary changes in connective tissue tumors, Manasse's second case seems to be an undoubted example of this mode of formation. In the more advanced stages purer masses of amyloid material would result, which would bear quite a resemblance to the apparently primary amyloid deposits illustrated by Manasse's first case. In both the amyloid material present was tinctorially similar. In both cases, as well as in many others previously described, the amyloid substance appears to be deposits within preformed spaces that from their form, situation and endothelial lining undoubtedly represent the lymphatic vessels. A nearly constant feature of amyloid tumors of the conjunctiva, air-passages and tongue is the presence of multinuclear giant cells. These giant cells are generally regarded as derived from the endothelial cells of the lymph vessels and to play the part of giant cells that form about foreign bodies; in this case the amyloid material is the foreign body, and histologic appearances indicate that the giant cells take up and dissolve the amyloid material. The presence of amyloid material in the lymph vessels would seem to indicate that this peculiar substance is first produced in the tissue spaces, whence it may subsequently infiltrate the surrounding tissue. Further than this, nothing positive can be said concerning the method and the cause of the local accumulation of amyloid material in the cases here described.

EARLY MEDICAL HISTORY.

According to Packard[1], the earliest mention of an autopsy performed in America is to be found in "An Account of Two Voyages to New England," published in London, in 1674, by John Josselyn, an Englishman, who had spent some time in New England. He writes: "A young maid that was troubled with a sore pricking at her heart, still as she leaned her body or stept down with her foot to the one side or the other; this maid during her distemper voided worms of the length of a finger; all hairy with black heads; it also fell out that the maid dyed; her friends desirous to discover the cause of the distemper of her heart had her open'd, and found two crooked bones growing upon the top of the heart, which as she bowed her body to the right or left side would job their points into one and the same place, till they had worn a hole quite through."

In the records of Roxbury Church, on Aug. 20, 1674, is the following: "John Bridge, died of ye Winde Collick and was buried the day following. His body was opened. He had sundry small holes in his stomak & bowels, & one hole in his stomak yt a man's fist might passe through, wch is throught was rent wth vyolent straining to vomit, the night before he dyed, for the watchers observed yt something seemed to rend with in him, and he said of it I am a dead man." Dr. S. A. Green, in whose centennial address before the Massachusetts Medical Society these cases are mentioned, also found accounts of two other autopsies in volume xxx of the records of the Essex County Court. On June 1, 1676, an examination was made of the body of Jacob Goodale in the complaint against Giles Cory. The jury's finding was: "Several wrongs he hath had on his body, as upon his left arme and upon the right thigh, a great bruise wch is very much swold, and upon the reigns of his backe, in colour, differinge from the other parts of his body we caused an incision to be made much bruised and Run with a gelly and the skin broke upon the outside of each buttocke. Sworne to 30: 4 mo. 76."

Cotton Mather says of this case, "That about seventeen years ago Giles Cory kept a man in his House that was almost a Natural Fool; which Man Dy'd suddenly. A Jury was Impannel'd upon him, among whom was

[1] Proceedings Path. Soc. of Philadelphia, 1900, iii, 46.

Dr. Zorobbabel Endicot; who found the man bruised to Death, and having clodders of Blood about his heart."

The other autopsy was held on May 2, 1678; the report on the result was made by the "Chirurgeon." "Search the Body of one called Edward Boyde: I made the incision upon the parte of his Body which was most suspitious which was upon the Temporall Muscle: I layd the Bones Beare: wee could nott find any fracture in the least neither was the flesh in any wise corupted or putrified."

Thus there are at least four autopsies prior to the one that Dr. Johannes Kerfbyle and five other physicians made on the body of Governor Slaughter of New York, in 1690.

In another paper, Packard[2] gives a résumé of the few facts known concerning the earlier medical societies. Prior to the founding of the College of Physicians of Philadelphia, in 1787, there were nine medical societies which, at one time or another, led a more or less active existence. Of the nine only three have survived to the present time—the Medical Society of New Jersey, the Massachusetts Medical Society, and the New Haven Medical Society. The College of Physicians of Philadelphia is the fourth in seniority of the medical societies in this country.

The title-page of the first number of a periodical that a medical society in Boston proposed to publish in 1735, contained the following among other titles: "A History of the Dysentery Epidemical in Boston;" "Some Account of a Gutta Serena in a Young Woman;" "The Anatomical Inspection of a Spina Ventosa in the Vertebræ of the Loins in a Young Woman;" "Some Practical Comments or Remarks on the Writings of Dr. Thomas Syndeham." Unfortunately this interesting number was never published. This society existed from 1735-1741. Its existence has been doubted, but Dr. Packard shows conclusively that it not only existed, but also flourished.

BUBONIC PLAGUE.

Now that the plague has reached Honolulu, and its introduction by way of one of our Pacific ports to this country is a possibility, it is well to be informed as to its peculiarities and dangers. A timely pamphlet has been sent out from the Government Printing Office, by Dr. Walter Wyman, Surgeon-General of the U. S. Marine-Hospital Service. It contains a brief historic introduction, followed by an account of the present epidemic, or almost pandemic, and a very complete statement of our modern knowledge of the disorder, its varieties, how it is spread, the life history of the bacillus, the means at our disposal for producing immunity and cure, and the hygiene and other measures advisable in case of its occurrence. The memoir concludes with a reproduction of the U. S. quarantine regulations in regard to this disease. It is obtainable by application to the U. S. Treasury Department or the Surgeon-General of the U. S. Marine-Hospital Service, and in view of possible, though it is to be hoped remote, contingencies it will be well for physicians, especially those on the seaboard, to post themselves by its contents.

[2] Phila. Med. Journal, Jan. 27, 1900; THE JOURNAL, p. 354.

STUDENTS AND MEDICAL PRACTICE.

The medical students of South Carolina have succeeded in obtaining legislation exempting them from the state examination, and those of Ohio are diligently working to the same end. As the Charleston *News and Courier* reports it, the students of the Medical College of South Carolina are admitted to practice in the state on the diplomas of the college, without further examination, "trusting to the standard and integrity of the faculty of that college." A still further backward step was made by making it optional with the Board of Examiners to recognize the diplomas of any four-year-course colleges of acceptable standard as qualifying to practice. As matters stand, the responsibility of medical reform rests, as regards outside institutions, on the examining board, and for the local institutions, on the "standard and integrity of the faculty," and it is hoped they will both duly apprecite this. In the case of the Ohio students, also, who, against the protest of the faculties of the colleges, are lobbying against the proposed practice act, the "standard and integrity" of the faculties should insure that no incompetent practitioners are let loose if the guarantee of the state examination is lost.

DECLINE OF CONSUMPTION IN NEW HAMPSHIRE.

While the sanitarians of California and Colorado are lamenting the increase of consumption within their borders, those of some of the eastern states find reason for congratulation on its diminution. The *Sanitary Bulletin* of New Hampshire, for January, contains a diagram showing the ratio of deaths from this cause to the total mortality for each year from 1884 to 1898. Commencing with over 14 per cent. in the first-named year, the percentage rapidly decreased to a little over 10 in 1889, rose with the influenza epidemic to about 11.5 in 1890, then rapidly fell again to 9.5 in 1892, rising a little above 10 in the three following years, to again steadily fall to exactly 9 per cent. in 1898. A reduction of over one-third in the proportional mortality from this disease is an encouraging showing, and from the diagram it would seem there is nothing to indicate that the diminution, which has been so long and steadily progressive, will not still continue. The *Bulletin*, in its brief statement, makes no attempt to account for these facts. It would appear that the people in New Hampshire are becoming immune or that the disease is in some way or other losing its virulence there. The change is certainly too great to be accounted for by the emigration of consumptives; indeed, there is no certainty that that is a factor at all. The *Bulletin* also contains some remarks on the danger of infection by milk, which it considers as having been over-estimated. In support of this opinion it refers to the data given out by the agricultural experiment stations in Wisconsin and Connecticut. The experiments that have been made of feeding calves with the milk of tuberculous cows in the Storrs Agricultural Experiment Station of Connecticut are noticed, and the conclusions deduced are quoted. It

would seem from these and other facts that, while there is no reason for neglecting necessary precautions, there has been an unnecessary number of alarmist statements given out on this point.

FOOTBALL AND DEVELOPMENT.

A Boston physician has made the charge that the popular game of football is disastrous to grace and symmetrical physical development. He says it develops the external and superficial muscles at the expense of the internal and more important ones, that its positions are abnormal, that except running there is hardly an exercise in the game that calls for normal action, that it develops muscles at the expense of vital force, etc.; in short, that it is altogether bad and tending to physical degeneracy. From the usual slight acquaintance with the game possessed by the average citizen, these criticisms appear a little one-sided. If there is any recreation that seems to call into play every possible bodily movement, football would seem to be the one. It may not be specially conducive to grace, either inward or external; we can not say it is not, but its perils appear to outsiders to be chiefly mechanical ones; it seems less dangerous than an ancient gladiatorial combat, but rather more so than a modern French duel. Aside from its apparent dangers, which are probably less real than might be thought, it has its merits as an athletic exercise, and evidently demands more than mere muscle work, though as such it cultivates the highest development. As to its tendency being to asymmetrical development, it is claimed that the records of our colleges find the football players the most symmetrically developed of all athletes. There is a chance for more thorough research into the effects of football on the organism, but so far as the evidence is in, the particular charges made seem hardly justified.

VEGETARIANISM AND THE BIBLE.

A vegetarian editor claims that the Bible is the authority for the statement that the first men were vegetarians, and that when man enlarged his diet he limited his longevity. The first chapters of the Bible are not generally accepted as literal history, and the views as to primitive man, even among orthodox Christians, are not that he was altogether a superior being to his modern successors physically, morally or intellectually. The credible evidence that he was exclusively a vegetarian is very slight in amount or in value; he was probably at least partially insectivorous, as are his nearest relatives, the quadrumana, as can be seen by inspection of any monkey-cage. Taking it literally, however, first chapters and all, the Bible gives very little support to the vegetable diet theory. From Abel's satisfactory sacrifice and his murder by the vegetarian Cain, down through the Old Testament in which we read that meat eating was made a religious duty of the chosen people, and in the New Testament with its fishermen apostles and its mention of false teachers, "commanding to abstain from meats," we find almost nothing approving and much disapproving of vegetarianism. It is, in fact, a perversion of Scripture and, therefore, from a Christian point of view actually wicked in vegetarians to claim the Bible as an advocate of their cause. They had better confine themselves to such support as they can find in profane literature, and the use of such epithets as "pigarians" will, in default of argument, probably serve their purpose.

APPROPRIATED FOR COMMERCIALISM.

A well-known eastern physician published an article in a reputable medical journal, and an enterprising drug firm, interested in the remedy mentioned, had 120,000 reprints made and sent them broadcast to the profession, over his signature, black lining the margin of the page where the remedy was alluded to. After spending $600 to prevent this use of his production, the physician was beaten on the ground that the article was not copyrighted. The obvious moral from this fact is, publish your articles in copyrighted publications, especially if they contain anything that by hook or crook can be utilized by commercial outsiders. This answers the question how to prevent such misuse of scientific material; the courts certainly will protect against infringement of the copyright laws. If articles are to be printed in uncopyrighted journals, it will be well to insure that they contain nothing that can be pirated to the financial advantage of anyone. We regret that it must be admitted that there are some who wish no defense from gratuitous advertising in this way, but we believe that honest and scientific physicians can, with a little care, put themselves in a position to be free from such unpleasant and unprofessional notoriety.

ALBUMINURIA AND NEPHRITIS IN THE COURSE OF DISEASES OF THE SKIN.

There is abundant evidence of the interrelation of function between various organs and tissues, as, for instance, between the skin, the kidneys, the lungs, and the gastro-intestinal tract. Not only is this relation of importance physiologically, but it can be, and is, often availed of therapeutically, failure in the functions of one of these tissues being compensated for by increased activity on the part of the others. The skin, by reason of its vast extent and its exposure to injurious influences of all kinds, is especially liable to be the seat of disease, and the importance of its functions and its relations to other organs makes such disease particularly serious. Interference with the action of the skin throws, as is well known, increased work on the kidneys; burns of the surface may be attended with ulceration of the duodenum or the stomach; various lesions of the cutaneous integument may be the portal of entrance for various infections. In view of these facts, it is rather a matter for surprise that disease of the skin is not more commonly followed by serious complications than is generally appreciated. Systematic investigation, however, may prove that this infrequency of association is more apparent than real, and in support of such a possibility Pechkranz[1] reports the results of a careful study of the urine in 128 cases of scabies, with more or less extensive eczema in consequence of scratching and infection. The patients were principally between 9 and 20 years of age, and almost all males, in order to eliminate, so far as possible, the leucorrheal and menstrual discharges. The test-agents employed were nitric acid, acetic acid with

[1] Wiener Med. Woch., 1899, Nos. 51 and 52.

potassium ferrocyanid, and sometimes also trichloracetic acid. Among the entire number of cases albuminuria was discovered in twenty-four, either persisting throughout the period of observation—from one to two weeks—or occurring irregularly in both time and amount. In some the amount of albumin present in the urine was considerable, and in a small number tube-casts also were found. Cases of analagous character have occasionally been recorded by other observers. In the absence of positive knowledge as to the etiology of the disturbances of renal function under the conditions named, Pechkranz suggests that they may be due to irritation of the kidneys by micro-organisms that have gained entrance into the body through lesions in the continuity of the skin, or by the toxic products of bacterial activity.

SUTURE OF WOUNDS OF HEART.

Although it has long been known that death does not invariably follow immediately on wounds of the heart in human beings and animals, and that spontaneous recovery from such wounds may take place in animals, as demonstrated by post-mortem examination, it is only within comparatively recent times that the possibility of recovery in human beings also has been adequately appreciated. Wounds of the heart are attended with two important sources of danger, namely, excessive hemorrhage and interference with the action of the heart from the pressure of the blood in the pericardial cavity. Until within a few years surgical intervention for the relief of such wounds was not merely not sanctioned, but was actually condemned. As, however, it was shown experimentally that even radical operations could often be performed successfully on artificially induced wounds of the heart in lower animals, it began to be realized that similar measures of treatment were applicable also in the case of man. In nine cases in which suture of the heart has been practised in human beings, recovery ensued in four, and death in the remaining five from complications and accidents. With the object of determining how extensive an injury the mammalian heart can safely withstand, and how extensive a suture could be applied to the heart without interference with its function, Elsberg[1] undertook a series of experiments on rabbits and dogs, and found that the heart in these animals bore a much greater amount of manipulation than had hitherto been suspected. Large wounds of the heart proved capable of healing, and the healing process occurred in a manner analogous to that in which it takes place in other muscular tissues. Even extensive suture of the heart-wall did not interfere with the functional activity of the cardiac muscle as a whole, although a large number of muscular fibers were destroyed, and were replaced by connective tissue. The results of these observations, it is believed, can in a general way be legitimately applied to the human heart. They are supported also by the results of clinical experience in human beings. The proposition may be made, therefore, that wounds of the heart in man should be sutured when all other means of relief have been tried without success. The introduction of the suture, which preferably should be of silk, was found to be unattended with danger of sudden arrest of the heart, as has been feared in the past. An interrupted should be preferred to a continued suture and the stitches should be as few as possible, in order to keep within the narrowest limits the amount of connective tissue that will necessarily be formed. As little of the heart's substance as possible, together with the epicardium, should be included in the suture, and this should be tied during the diastolic relaxation of the viscus. Absolute indications for operation, or for the time of its performance, can not be laid down. The decision in each case must, for the present at least, be made on the individual merits of the case.

[1] Jour. Exp. Med., iv, 5, 6, p. 479.

UNIFORM LEGISLATION OR RECIPROCITY.

The movement inaugurated, or rather promoted, by the Wayne County (Mich.) Medical Society, for the establishment of a reciprocity in licensing to practice medicine in the different states has been in general very favorably received by the profession. The justice and the expediency of such reciprocity can hardly be questioned provided no deterioration of the standards is implied. What the country needs is a well-qualified profession, and it makes no difference where the qualifications are determined if only this is adequately done. At present the condition as regards the country as a whole is chaotic; a physician in one state may have no professional rights across an imaginary line that may cut his practice in two. Such a condition is exceptional and is provided against in some states, but it may occur. Each state board makes its own standard, and, in those states in which the law provides for reciprocity, the differences are considered by those in authority to be often so great that the application of this part of the law is out of the question. The chairman of the committee on legislation in one state openly says that the standard in his state is so high that reciprocity is out of the question, for the present at any rate. In many of the states no provision has been made for recognizing certificates from other states, no matter how high the standard might be. All these are drawbacks to true medical reform, which should first of all be unselfish and scientific, recognizing whatever has proved itself worthy. Inasmuch as it does not appear to be a function of the general government, the regulation of medical practice will have to be left to the states. The work of reform, however, is not done by disconnected individual action on their part. Local laws with local tinge and for local advantage only are not a worthy ideal for an honorable scientific profession. The recognition of worth and fitness should be universal; in no other way can we obtain or deserve the general approval of the public as well as of ourselves. The standards should be high, and, in an ideal condition of affairs, ought to be sufficiently uniform to permit a qualification in one region to be valid in another where medical practice acts exist. This ideal can not be reached by disconnected efforts; the movement must be co-ordinate in the different states. It may require delegated action by states and national societies as well as by conferences of examining boards, such as has just been held by those of the New England States. Results thus far attained are so unsatisfactory that evidently the past methods adopted have not been the best ones. What is needed is united action among those who are striving in different states for satisfactory laws. The profession in each has acted without regard to the ex-

perience of the profession in others. It would seem that much could be learned by inquiring into the cause of success or failure of those working in other states, not only in knowing what is the best law, but the best way of getting it. Uniform legislation in the different ones would be better than reciprocity, but this uniformity can only be obtained by an organization of representatives from every state. Consistent and persistent effort on the part of such an organization would in time bring about the desired object. In any case the subject, in all its aspects and with its various problems, needs to be kept before the medical profession. The results may and probably will not appear at once, but steady agitation will ultimately have its effect.

Medical News.

A LEGACY of Jenny Lind-Goldschmidt gives the Samaritan Hospital, Stockholm, Sweden, $30,000.

THE CHILDREN'S ward at St. Luke's Hospital, Jacksonville, Fla., which was dedicated three weeks ago, was damaged by fire January 26.

TWO RECENT attempts to establish a crematory at Monmouth Beach, N. J., have met with such opposition from the cottagers that the project has been abandoned.

STEPS HAVE been taken for a new and enlarged hospital for the Jefferson Medical College, Philadelphia. Owing to the increased number of students and clinical material of this hospital, the present facilities are inadequate. The old building will only in part be torn down.

THE SUPREME Court has sustained the law requiring all barbers in Minnesota to have licenses, which has been the subject of contest for two years. It is held that there is as much necessity for a law requiring the maintenance of cleanly barber shops as there is for those regulating the practice of dentistry, law, medicine or plumbing.

CLEVELAND has an Appendicitis Club, to be eligible to which it is necessary to have a surgeon's certificate that the applicant has undergone an operation for that disease. The *Chicago Daily News* suggests that another operation on their brains would be interesting to the general public as showing what quality of gray matter, if any, goes to the formation of the nominal thinking apparatus of the members.

ACCORDING TO *Vossiche Zeitung,* Berlin, the German government proposes to introduce a bill to regulate private laboratories. The proposed bill is to contain measures which will compel investigators to take extraordinary precautions against the escape of pathogenic germs. The journal quoted condemns such legislation as likely to curtail the important investigations which are in progress, and hamper those who are doing bacteriologic work. The probable cause of the idea of such proposed legislation was the outbreak of plague in Vienna over a year ago, resulting from carelessness on the part of some one.

PROGRESS OF THE PLAGUE.—The official reports convey the following information: 1 death occurred at Rio de Janeiro, January 11; 35 are reported from Honolulu from the outbreak of the epidemic to January 17; 9 cases and 5 deaths were reported from Noumea, New Caledonia, January 1, and 1 case from Lisbon, Portugal.

PRACTICE IN IOWA.—According to the lay press, the senate committee on judiciary, in Iowa, has decided to report a substitute bill for the bills already reported relative to the examination of medical graduates of the State University. It was decided to report a bill providing that the graduates of all medical schools shall be placed on an equal footing; they shall pay a fee of $10 instead of $25 for a certificate of admission to practice; all graduates of all medical schools in the state, of good standing—this is determined by the State Board of Medical Examiners—shall be examined by a committee of that Board at the time of graduation, at the place of graduation. This bill, it is said, satisfies the friends of all the medical schools of the state.

ASSISTANT-SURGEONS FOR THE PHILIPPINES.—Surgeon-General Sternberg asks us to announce that the Medical Department of the Army is in need of additional assistance in the Philippines and it is desired that candidates for appointment as acting assistant-surgeons will make application to the Surgeon-General of the U. S. Army, Washington, D. C. Applicants must be graduates of reputable medical colleges, who have had practical experience, since graduation, in hospitals or in private practice. Candidates between the ages of 25 and 35 are preferred. They should forward, with their application, one or more letters from well-known professional men, giving testimony as to their character and qualifications. Appointments will not be made through political influence, and letters designed to produce political effect will injure rather than benefit the applicant. All applicants will be examined as to their physical and professional qualifications for service in the Philippines before they are given a contract. Contracts are made for one year, with the understanding that the approved candidate will remain in service for a longer period if his services are required.

DOCTORS AND PATIENTS.—It seems that Goltzius, a prominent engraver and artist of Holland in the sixteenth century, published a set of four engravings in 1587, representing the relations between the physician and the patient at the different stages of illness and after recovery. The set is reproduced in the February 15 issue of *Janus.* Each engraving shows two apartments. On the left a patient is in bed, the physician feeling his pulse, surrounded by the anxious family. The scene on the right shows two patients, one with a fractured limb, on which the physician is busily engaged. In the foreground, against the dividing wall, stands the allegoric representation of the physician as he appears to the patient and his friends, a colossal god, a Christ, radiating wisdom, strength and love, in one hand a vial of urine and in the other a cauterizing iron. The same scenes are portrayed in the three other engravings, the patients advancing toward recovery, but the colossal figure in each changes. Instead of a god, No. 2 is merely an angel, but still grand and noble. In No. 3, in which the patients are depicted sitting up, the colossal figure of the physician is that of a well-dressed, dignified man. In No. 4, in which the physician is represented extending his hand for his fee—the patients dressed for the street—the colossal figure has become a devil with horns and grasping hands. Two other similar sets are also reproduced, later in date. All are carefully drawn to the smallest details, and are interesting portrayals of the art of medicine in their day. Goltzius appended to his set the warning to physicians to demand their pay while the patients are still suffering and not wait until their recovery.

NEW YORK.

AN EPIDEMIC of measles has broken out at Fort Slocum, on David's Island. This post, which has been practically quarantined, has been for the last two or three months the recruiting rendezvous for the regular army stations east of the Mississippi.

CAPT. FREDERICK P. REYNOLDS, assistant-surgeon, U. S. A., Fort Slocum, and who was ordered to accompany recruits on the U. S. transport *Sumner* to Manila, has been detailed as a member of the board of medical officers convened in San Francisco, vice First-Lieutenant Bailey K. Ashford, assistant-surgeon.

MORTALITY IN 1899.

The annual bulletin of the State Board of Health shows the number of deaths during 1899 to have been 121,320, which is 850 more than in the previous year and 4740 more than in 1897, a year of exceptionally low mortality. The death-rate per thousand was, however, the same as the average for ten years, i. e., 17.3. There was a notable decrease in the infant mortality and in deaths from diphtheria, as compared with the average for the last ten years. It is estimated that la grippe caused 7000 deaths in the first four months of the year.

STATE HOSPITAL FOR CONSUMPTIVES.

On January 31 there was a joint hearing of the Senate Finance Committee and the Ways and Means Committee of the Assembly for the purpose of discussing Senator George A. Davis' bill, which asks for an appropriation of $200,000 for the establishment of a state hospital for consumptives. Of those medical men who spoke on the subject, only one, Dr. J. H. Byrne, chairman of the Committee on Charities and Legislation of the New York Medical League, expressed his disapproval of the measure. He characterized it as unwise and inadequate legislation, objected to the admission of paying patients to such a hospital, and advised the legislature to go slowly in the matter of making the appropriation. Dr. John H. Pryor, of Buffalo, in addition to urging the passage of the bill, suggested that there should be three instead of two persons on the Board of Managers, and that not more than two should belong to one school of medicine.

New York City.

THE ANNUAL charity ball, in aid of the Nursery and Child's Hospital, which has been more or less of a fashionable event since 1857, except two years during the Civil War, when it was omitted, took place February 1, and was highly successful.

DEATH FROM BERIBERI.

A death from beriberi is reported from the Long Island College Hospital, Brooklyn. The patient was the captain of the Portuguese bark *Nanny*, which recently arrived from Oporto, and he was ill with the disease at the time the vessel reached New York. Two days later he was removed to this hospital, where he died on the day of his admission.

MT. SINAI HOSPITAL.

Ground has been broken for the new buildings which are to house this hospital. The site selected is the entire block bounded by Fifth and Madison Avenues, and One Hundredth and One Hundred and First Streets. Construction will be largely of marble and light brick, and it is estimated that the building and its equipment will cost $1,335,000.

LOCOMOTION WITH BROKEN LEG.

A policeman in the Borough of Brooklyn recently noticed a man hopping along on one foot, then falling; then picking himself up and hopping along for a short distance, only to again fall. On inquiring the cause of the man's disability he received the rather startling information that he had broken his leg while in the Borough of Manhattan, but, nothing daunted, had traveled in the elevated cars, and then tried to walk to his home. An ambulance was called, and the surgeon in charge confirmed the statement that the leg was broken. The man had almost succeeded in reaching his home.

EFFECT OF FASTING.

A man in this city hopes to abstain from all food for forty days. He has already refrained from tasting food for twelve, and last year lived twenty-eight days without any. He then reduced his weight from 210 to 168 pounds. On the first day after this fast he took a half cup of bouillon; on the second a glass of milk, and on the third a good meal. The present fast began January 22, and he claims that he has not taken anything since that time, except between one and two pints of a pure mineral water daily. When he began his weight was 207 pounds; now it is 184 pounds. On the second day he felt quite weak, and since then has been occasionally a little feverish, but his condition is such that he puts in the usual day's work at his place of business. Aside from improving his own health, he says that his object is to keep accurate records of his observations as to his weight, girth, and quantity of water ingested, with a view of furnishing useful information to the general public and to the medical world.

PROPOSED LEGISLATION.

A bill has been introduced in the legislature providing that in case the amount of antitoxin prepared under the auspices of the New York City Board of Health shall exceed the quantity required for actual use, the board may cause such excess to be sold at public auction, provided that the aggregate net amount of each sale shall not in one year exceed $5000. Another measure introduced provides that no person or corporation shall sell or offer for sale any proprietary or patent medicine containing cocain; medicated snuff and tobacco and headache and catarrh and hay fever "cures" are specially referred to in the act. Still another bill has for its object the establishment of a board of examiners in lunacy for the City of New York. It was introduced in the state Senate on January 31, and provides for the appointment by commissioners of public charities, of a board of duly qualified physicians who shall have had at least ten years' experience in the active practice of medicine. Four members are to be appointed for the Boroughs of Manhattan and the Bronx, four for the Boroughs of Brooklyn and Queens, and two for the Borough of Richmond. The chief examiner is to be selected from the City of New York at large, the others to be residents of their respective boroughs. The salary of the chief examiner is fixed at $5000 a year, while the examiners for Manhattan, the Bronx, Brooklyn, and Queens are to get $3,500, and those for Richmond (Staten Island), $1500. A bill has also been introduced providing that an ambulance shall have the right of way in any street over all other vehicles excepting those carrying the U. S. mail.

N. Y. POST-GRADUATE HOSPITAL.

The 50th annual report of this institution shows that during the past year it gave 38,313 free days of hospital care. Five hundred and twenty-three practitioners attended the medical school, and the amount of money received from students' fees and certificates, which was given to the hospital, was $30,046. Among the 1633 adults and children treated in the wards, there were 77 deaths, and among the 1035 infants in the babies' wards, 253 deaths. This apparently large mortality among the latter is explained by the fact that incurable cases are not excluded, and a considerable proportion of those treated were known to be of this character when admitted. In the dispensary department, 17,455 new patients were treated, an increase of 1000 over the preceding year, and in the lying-in department, 368 were treated during confinement in their own homes. There is at present no indoor lying-in department and the directors refer to the urgent necessity of having one provided. During the year, $3359 was received from the municipal treasury, toward the maintenance of babies. The city does not contribute a lump sum for the purpose of the babies' wards, but the authorities agree to pay 38 cents a day for each pauper infant treated in the institution provided it has been a resident of New York for twelve months. Since the last report was published, an arrangement has been made with the managers of the Dairy Fields Home, at Englewood, N. J., by which patients from the orthopedic ward may be transferred to that institution, though still remaining under the care of the Post-Graduate surgeons. By the gift of Harris C. Fahnestock, there has been erected, opposite the Post-Graduate Hospital, the Margaret Fahnestock Training School for Nurses, which is a part of the medical school and hospital.

PENNSYLVANIA.

AN INMATE of the almshouse in Scranton recently had left to him a fortune of $12,000.

ON ACCOUNT of smallpox in the Westmoreland Hospital, at Greensburg, that institution has been quarantined. Thirty patients with other maladies were under treatment at the time.

OWING TO the prevalence of scarlet fever and diphtheria in

Scranton, Health Officer W. E. Allen has given orders to close the Scranton Public Library for an indefinite period.

THE PUBLIC school in Conestoga Township is perhaps the first in this country to adopt individual drinking-cups for its pupils. The cup is made of agate and holds about one-fourth of a pint.

A PHYSICIAN was recently tried in Harrisburg on the charge of performing a criminal operation by which his victim died. He was sentenced to the penitentiary for four years and six months and also fined.

QUARANTINE AGAINST RABIES.

Several weeks ago a dog supposed to be mad bit others in the neighborhood of Miles Township. Soon afterward many dogs were killed. It was noticed that several days after cattle also manifested signs of the disease. The Live Stock Sanitary Board was notified and sent Dr. John Riter to the district, and, after making a thorough examination, he decided that the cause of death among the cattle was rabies in a severe form. A strict quarantine was immediately placed on all cattle in the district.

CLOTHES AS CARRIERS OF INFECTION.

A recent order has been issued in Pennsylvania calling on the officers connected with the Factory Inspection Law to break up the practice of selling clothing made in unhealthy or unsanitary places. It is said that in Philadelphia over 100 places in which clothing had been made in buildings where infectious or contagious diseases had been found were closed during the past year. The clothing found was confiscated. It is further stated that only a few days ago clothing was being made in a place where both scarlet fever and diphtheria prevailed. In this instance the parties had only been in this country for a few months. The greatest offenders are those who make a business of peddling.

Philadelphia.

DR. J. H. MUSSER entertained the Stillé Medical Society at his residence on the evening of January 27.

DR. SOLOMON SOLIS COHEN has been chosen to deliver a lecture in the Mickve Israel Association course, February 11.

THE BOARD of Directors of the Jewish Maternity Home has decided to make an addition to the building now used by that institution. The new department will be devoted to gynecology.

THE NEW operating-suite of the University Hospital, the gift of James D. Lippincott, has just been opened. The suite contains four sections, a large operating-room in the center, and opening into this a sterilizing-room, the surgeons' bath-room, the etherizing-room and one for recovery from the anesthesia.

AT THE annual meeting of the Medico-Legal Society, January 30, the following officers were elected: president, A. M. Eaton; first vice-president, L. Hooler; second vice-president, Samuel Wolfe; secretary, C. H. Clewell; treasurer, G. W. D. Peltz; librarian, J. D. Nash.

THE SOCIETY of ex-Resident Physicians of the University Hospital held its first annual dinner the evening of February 3. The meeting was attended by fifty of the eighty-two ex-residents of the University Hospital. The following officers were elected: president, H. R. Wharton; vice-presidents, Edward Martin, Barton Cooke Hirst, Richard H. Harte; secretary and treasurer, Albert Philip Francine.

THE PROCEEDS from the annual charity ball during the past twenty years has been $200,000. This has been distributed among fifty charitable organizations throughout the city. This year the following will be beneficiaries: University Hospital, Jefferson Hospital, Women's Directory, and the Southeastern Dispensary.

SCHOOL INSPECTION.

The reports by the inspectors of public schools, recently appointed, go to show that the work has been most satisfactory. So far only one case of diphtheria has been found, and in that instance the child was at once sent home and the room disinfected. The following were represented: skin diseases, ulcerated mouth, gastritis, nasal catarrh, eye strain, feeble-mindedness, pharyngitis, chicken-pox, measles, ulcer of cornea, hypertrophied tonsil, nasal obstruction, conjunctivitis, goiter, chorea, granular lids, mumps, tinea circinata, palpitation of the heart and enlarged lymphatic glands.

OPIUM SMOKING.

Since the unfortunate death of the young woman from smoking opium, mentioned in these columns last week, a crusade has been instituted by the city authorities among the citizens of Chinatown, and a large number of arrests have been made. While it was known that such practices were by no means uncommon, the amount of vice and crime upturned has been something to engage the attention of the people at large. As a result of the arrests a large sum of money has been obtained by fines, while on others a sentence to the House of Correction has been imposed. In revenge many of the Celestials propose a boycott on those members who have become Christians.

MARYLAND.

THE NEW medical practice bill introduced into the legislature makes unlawful the itinerant vending of any drug, ointment or application of any kind intended for the treatment of disease or injury.

ACCORDING to the annual report of the Board of Charities and Correction, of Frederick County, the disbursements for Montevue Hospital (for the insane) of Frederick City, for the last year, were $23,178. The average number of inmates was 263.

THE STATE veterinarian reports that, during the last four years, 191 visits were made to stockyards and abattoirs and 45,625 cattle inspected, among which were found 323 cases of tuberculosis and 19 for lumpy jaw.

SCHOOL FOR FEEBLE-MINDED.

The Maryland Asylum and Training School for Feeble-Minded Children, Owing's Mills, has asked the legislature for $200,000 for the next two years in addition to $13,000 already received annually for its maintenance. The superintendent was given the floor of the House of Delegates, February 1, for an exhibition by twenty of his pupils. A brass band composed of very young boys played several pieces, which the others sang. There were recitations, and specimens of handiwork were exhibited. The appropriation desired is for new buildings and increased accommodations.

REGULATION OF DAIRY PRODUCTS.

A bill has been introduced in the legislature for the appointment of a state dairy commissioner at a salary of $2000, and with two assistants with salaries of $1200 and $1000 respectively. The commissioner is to be charged with the enforcement of all laws against fraud and adulteration in the manufacture and sale of dairy products. Free analyses are to be made for him by the chemist of the Maryland Experiment Station (Agricultural College), and he is also empowered to employ other chemists, experts, counsel, etc., when deemed necessary. Free access to factories, etc., with power to secure samples at pleasure is to be permitted, and $12,000 appropriated annually for expenses.

BLOTS ON THE ALMHOUSE SYSTEM.

"One of the worst blots upon the almshouse system in this state," says Secretary Preston, of the Lunacy Commission, in his fourteenth report, "is the freedom with which the sexes mingle. During the past year at least half a dozen children have been begotten and born in the county almshouses. This refers, of course, to the children born of insane or feeble-minded women. Where there is no supervision or at least a very feeble attempt at supervision over the pauper insane such calamities must occur. In several of the county almshouses of this state there are insane or feeble-minded women who give birth to children almost as frequently as the law of reproduction permits. Under the plan proposed" (the uniting of several counties in building and equipping a suitable institution located on a large farm and provided with competent service) "the sexes would be vigorously separated and such shameful occurrences would be impossible. The superintendents of almshouses have repeatedly told the secretary that under the present system it is impossible to keep the men and women apart. Disregarding the moral side of the question, it would be far more economical for the counties to adopt some such plan as the one proposed or send such women to the state institutions. The children born of this class are as a rule idiotic and lifelong charge upon the country." Referring to epileptics, the same report says: "There is no class in the community more deserving of sympathy than those unfortunate individuals afflicted with epilepsy. Epileptic children are not allowed to go to school if they have attacks during

school hours. It is impossible for such children to obtain employment since, upon the first attack they are dismissed. Hence it is imperative upon the state to assume charge of this class or at least of the indigent individuals belonging to it. At present, there is absolutely no place in the state where indigent epileptics can be sent. The plan of colonizing them, which has been in successful operation for many years in Germany has been inaugurated in many of our states and has proved of inestimable benefit to this unfortunate and helpless class. It would be a perfectly feasible plan to inaugurate an epileptic colony at Springfield." (The second asylum for the insane). "It is clear that the state will be compelled to afford some provision for this class in the near future and there is plenty of room at Springfield for the colony."

Baltimore.

THE RECEIPTS of the two-days benefit recently given the Maryland General Hospital amounted to $1200.

FORTY-THREE of the 198 deaths reported in Baltimore last week were from pneumonia.

AN ENTERTAINMENT for the benefit of the Southern Free Dispensary was given on the 31st ult. The program included two comediettas with several musical numbers and dancing. During 1899 over 6800 cases were treated and 14,571 prescriptions compounded.

ANTI-EXPECTORATION.

An effort is being made to enforce the anti-expectoration law. The women have taken the matter up. The present ordinance refers to expectoration in street-cars and public buildings. The passage of a special ordinance by the city council, applying also to the sidewalks, is favored. The police commissioners will use their authority and will employ officers in citizens' clothes to enforce the present law.

DECISION AGAINST A SCHOOL.

Dr. Erwin Ebaugh has obtained a verdict for $270, in the city court, against the Baltimore University. He claimed that, by the terms of his contract as professor in the institution from Sept. 1, 1898, to May 1, 1899, he was entitled to one-tenth of the net income of the school during the period named, which it was alleged amounted to $2700. For the defense it was denied that there was any contract or any net income. Similar suits of Drs. Arthur G. Barrett and C. Urban Smith are continued.

OHIO.

DR. H. F. ROHRS has been appointed pension examining surgeon at Napoleon.

DR. D. S. GARDNER, of Massillon, has tendered his resignation as a trustee of the Cleveland State Hospital.

THE ANNUAL report of the Lakeside Hospital, Cleveland, shows an increase in the number of patients treated in 1899 over 1898, of nearly 25 per cent. The expenses of the hospital were upward of $90,000, and the income about $73,000, leaving nearly $20,000 to be raised.

IN THE report of the tenth annual meeting of the state and local boards of health (THE JOURNAL, February 3, p. 306) an error was made in announcing an election of officers. The meetings of the health boards are held under the auspices of the state officials, the state board paying all the expenses and the officers of the board acting as the officers of the meeting.

ILLINOIS.

Chicago.

DR. ARTHUR R. REYNOLDS, Commissioner of Health, delivered a public lecture February 2, on "The Work of the Health Department."

A MOVEMENT has been inaugurated toward the establishment of a hospital at South Chicago. The sum of $1025 has been subscribed for this purpose.

A MEETING of Illinois stock-raisers and dairy men was held February 2, and resolutions were passed recommending a change in the law which compels the injection of tuberculin in cattle shipped into the state.

AT THE annual meeting of the Chicago Medical Examiners' Association January 30, the following officers were elected: president, Denslow Lewis; vice-president, W. K. Harrison; secretary, G. F. Butler; treasurer, J. Homer Coulter.

MORTALITY STATISTICS.

The mortality during the past week was 504, which is 22 less than for the corresponding week of 1899, but 18 more than for the week previous. The greatest mortality was from pneumonia, which caused 113 deaths, or more than 22 per cent. of the total. This increase is due to the extreme severity of the weather.

INSPECTION OF SCHOOLS.

The report of the medical inspection of schools for the week ended February 3, shows a decided decrease in the number of exclusions of children over those of the preceding week. There were 4248 examinations made, as compared with 7376 for the week previous. The exclusions during the two weeks were 452 and 291 respectively. This diminished number is regarded as an indication that parents are waiting until their children are fully recovered from contagious diseases before sending them to school.

INDIANA.

THE SUPREME court has sustained the State Board of Health in its order excluding unvaccinated children from the public schools.

THE ANNUAL report of the Indianapolis City Hospital shows that 1808 patients were treated in the institution during the year. The total expenses were $31,000, and the per capita cost of maintenance was at the rate of 44 cents a day.

THE SUPERINTENDENT of the railway mail service recently received an order from the post-office department directing the fumigation of all mail from the counties of Clay, Montgomery, Putnam, Owen, Vermilion, Greene, Sullivan, and Vigo. The order is issued on account of the smallpox epidemic.

MISSOURI.

THE ANNUAL report of the German Hospital, Kansas City, shows that 720 patients were treated in the institution during the past year. The receipts and expenditures were about $14,000.

THE DEATH of a "Christian Science" believer occurred in St. Louis, February 3. The autopsy revealed the fact that death was the result of a strangulated hernia and could have been prevented had medical aid been sought.

TENNESSEE.

DR. J. FOSTER SCOTT has assumed his duties as city physician of Knoxville.

Nashville.

DR. OWEN H. WILSON leaves soon for a six months' tour in Europe.

DR. LARKIN SMITH has been re-elected health officer of Nashville.

AT A meeting of the City Board of Health, January 29, Dr. J. D. Plunkett was elected president for the ensuing year.

WISCONSIN.

AT A recent meeting of the Waupaca County Board it was resolved to build an insane asylum for that county.

THE STATE Board of Medical Examiners will meet at La-Crosse for the purpose of licensing such physicians as desire to practice in the state after April 1.

DISTRICT OF COLUMBIA.

HEALTH OF THE DISTRICT.

The report of the health officer for the week ended January 27 shows the total deaths to have been 102, of which 58 were white and 44 colored. At the close of the week there were 80 cases of diphtheria, 121 of scarlet fever and 4 of smallpox under treatment. There were three fatal cases of diphtheria but none of scarlet fever or smallpox. During the week there were 84 births, 14 still-births and 27 marriages.

Washington.

AT THE 311th meeting of the Washington Obstetrical and Gynecological Society, held the 2d inst. Dr. Fry reported a case and read a paper entitled "An Indication for Symphysiotomy."

DR. GEO. R. SORREL, the resident physician at the Washington Asylum Hospital, has tendered his resignation, and the commissioners have accepted the same and appointed Dr. J. F. Wallace, his successor.

EMERGENCY HOSPITAL.

At the meeting of the attending staff of the hospital, held on the 3d inst., the report of the work done for the past month was presented, and showed 1319 new cases, 4772 visits, 233 operations, 45 ward cases with 67 ambulance calls, 6 deaths and 5 post-mortems. The training school for nurses was reported to be in a flourishing condition and a committee of the staff was appointed to make some changes in the teaching department of the school.

IN CONGRESS.

Mr. Dalzell has secured the passage of the Senate bill, through the House joint resolution 140, which appropriates $4000 for a pedestal for a statute in Washington, D.C., in honor of Samuel Hahnemann, the founder of homeopathy. The resolution provides for its erection on public grounds in other than the Capitol or Library grounds, to be decided by the Chief of Engineers, U.S.A., the chairman of the Joint Committee on the Library, and the chairman of the Hahnemann Monument Committee of the American Institute of Homeopathy. Senator Hawley submitted a resolution, which was referred to the Committee on Printing, that there be printed 5000 copies of a document entitled "The use of the Roentgen Ray by the Medical Department of the U. S. Army in the War with Spain, 1898," of which 1000 copies shall be for the use of the Senate, 2000 for the use of the House of Representatives, and 2000 for the use of the War Department. Surgeon-General Sternberg writes approving the resolution, endorsing the work and suggesting that the report be also distributed among the leading surgeons of this country and Europe; the report also bears the approval of the Secretary of War.

CANADA.

ON ACCOUNT of the continued spread of smallpox in several districts of New Brunswick, general vaccination is proceeding in St. John's and other cities and towns of that province.

THE AFFAIRS of the provincial asylum at New Westminister, B.C., are to have a searching governmental inquiry. The legislature of the province, now in session, is appointing a special commission.

OWING to the prevalence of smallpox in Washington (U.S.), the provincial health authorities of British Columbia are now putting into force the regulations for the prevention of the introduction of the disease into that province.

DR. J. N. E. BROWN, at one time secretary of the Ontario Medical Association, and now territorial secretary and clerk of the Yukon Council at Dawson City, was married on New Year's day to Miss Freeman of Toronto, the Yukon governor's assistant secretary, a lady who had gained considerable repute in Canada as an authoress under the *nom de plume* of Faith Fenton.

LODGE PRACTICE.

In connection with the stand taken by the Medical Society of Victoria regarding lodge practice, it is stated that several applications have been received in response to the advertisement noted in the last correspondence to THE JOURNAL, but as yet no appointments have been made. It is indeed to be deplored that there are any members of the profession in British Columbia or elsewhere throughout the Dominion who would become practitioners in Victoria under such circumstances. May the report prove false. The fraternals will petition the legislature now in session asking them to revise and amend the medical laws of the province.

SANITATION OF MONTREAL.

Montreal is in the throes of a civic election, and the question of better sanitation is occupying a leading place in the campaign. Presiding at a general meeting of citizens this week, Dr. Reid stated that in respect to sanitation, this is one of the worst cities in the world, and that the death-rate for children between 2 and 5 years is fearfully high. Prof. J. G. Adami, addressing the Council of Women recently, made the statement that Montreal, in all that goes for sanitation, is twenty years behind all the other large cities on this continent, and that such a state of affairs will continue as long as the municipality is run in the interests of a clique and not for the common good of the citizens. He further spoke on the dangers in the city milk-supply.

MONTREAL GENERAL HOSPITAL.

The authorities of the Montreal General Hospital are making a special appeal to the general public for more generous support. Owing to increased expenses in connection with better equipment, the trustees have deemed it advisable to issue a special circular letter to the citizens of Montreal. While the expenses have increased, the contributions from the public have remained about stationary, being $24,654 in 1894, and $24,812 in 1899; besides the revenue from investments has considerably diminished from the decrease of the rate of interest. During the past year 2730 patients were cared for in the wards, while 35,078 outsiders received medical attendance at the institution.

AN IRREGULAR PRACTITIONER.

A member of the profession in Toronto—though not particularly of the profession—along with the proprietor of an alleged "cancer cure" has been committed for trial by the police magistrate of the city, charged with manslaughter, as the result of the death of a citizen, who was the subject of an incurable cancer. It has been stated that the death was accelerated through the application of a strong caustic paste to the man's side, which corroded the tissues, laying bare several ribs and the pleura of one side, resulting in an attack of pleurisy and pneumonia, of which he died. The accused will come up for trial at the May sitting of the assize court.

THE EIGHTH COMMANDMENT AS APPLIED TO A CANADIAN MEDICAL JOURNAL.

Some severe criticism of the medical journal alluded to has been noticed in certain quarters regarding the wholesale transference of articles appearing originally in other periodicals, to the pages of a Toronto journal without due and proper credit to the source from whence the articles were "pinched." Without having heard the other side—there may be no other side—your Canadian correspondent must needs say a few words on the subject. Not that it is the purpose to condone any such nefarious acts as have been charged—and even though the "peculiar methods" had been noticed for some time past, still, probably the duty devolves here to defend some of our fellow practitioners of that city, who were formerly on the editorial staff of the journal referred to, as they may not have been aware of the procedures, and further may have never seen the strictures passed on themselves as "editors" of the journal in question, as before the time the exchanges had occasion to complain, the editor and the staff of editors had retired and completely severed their connection therewith, leaving the field entirely in the possession of the sole proprietor of that journal. That the oldest medical journal in the Dominion of Canada should have fallen into such disgrace with its exchanges is certainly lamentable; but the fact that one unskilled in the etiquette of journalism was thus, by force of circumstances, thrust into the breach, may be scant excuse for the unwarrantable acts laid to his charge. It is rumored that one of our bright young physicians is about to take hold of the editorial helm, and if this rumor prove correct, the journal will rapidly regain its lost prestige.

TYPHOID FEVER IN MONTREAL.

After an interval of some years, Montreal is once again brought face to face with an epidemic of typhoid fever. The incidence of the disease at this juncture is largely due, it is stated, to the city milk-supply, being almost limited to those families obtaining their milk from one dealer. Although this same dealer, from the moment he was informed that something was wrong with his milk, took steps to avert the danger of an epidemic, he is now under considerable condemnation, severe and just, for what is asserted to be his criminal disregard or ignorance of the ordinary rules of hygiene. At some point or other the water employed to wash the milk cans became contaminated; and the important question is raised how Montreal as well as other cities in Canada is to legislate in order to prevent these epidemics of typhoid through milk. At the present time, in Montreal, the city milk inspectors are powerless outside the city limits; and although all the milk supplied to the city comes from districts lying entirely outside the corporation, the city authorities have no right to inspect the sources of the supply, so as to condemn unsanitary buildings, defective drainage, etc.

Correspondence.

Medical Education.

CHICAGO, Jan. 29, 1900.

To the Editor:—The very comprehensive and elegant editorial on "Medical Education," in THE JOURNAL of January 27, must commend itself, on the whole, to every teacher of medicine. It is a startling, if not disgraceful, fact that we have, during the past twenty years, seen the army of specialists grow, while the regular practicing physician has sunk into corresponding insignificance or obscurity. It is now the ambition of far too many medical students to become specialists in one department or another, where they can practice medicine "handsome and out of the wet."

From the standpoint of the schoolmaster, however, there are a few assumptions in the editorial which might lead to erroneous conclusions. In the first place it is a mistake to assume that any American medical school proposes, or ever proposed, to put the student of medicine to the serious work of original medical research and investigation. Doubtless this erroneous assumption comes from the fact that it has been proposed, and successfully tried, to put the student in the position of an observer and investigator, and in this manner to teach him the elements and facts of medical science in an unforgetable manner. This method is followed out in many of our laboratory guides in chemistry and physiology, as for example in "The New Physics," by John Trowbridge of Harvard University (D. Appleton & Co., 1884); in the "Text-Book of Chemical Phsiology and Pathology," by W. D. Halliburton (Longmans, 1891); and in "A Manual of Physiology," by G. N. Stewart (Bailliere, Tindall & Cox, 1895), not to mention other efforts of equal value. In every one of these manuals the author attempts to guide the student, by a series of directions and questions, to such operations and reflections as will inevitably lead him in the course of a few hours or even minutes to apperceive those related facts on which the science rests, the discovery of which consumed years and sometimes centuries of professional energy and experiment. Such exercises present the fact or facts to the student with all the vividness and intensity experienced by the original discoverer, and in this way he is led, in the course of a few weeks, through all the experiences of the medical profession.

In the next place the editorial erroneously assumes that there are certain inviolable principles at the foundation of medicine. It is a fact that certain principles do underlie the homeopathic system, but medicine is an inductive science, resting on a multitude of facts and phenomena, each one of which can be verified *ad libitum*. In this respect medicine differs from the deductive systems of homeopathy, theology, and law. Certain verifiable facts on which medicine rests have been correlated into theories from time to time. These theories have stood the test, some of more and some of less time and criticism. Many of them have ranked with the so-called principles of the deductive systems of homeopathy, theology, and law, but they are not in any sense principles, and the science of medicine does not rest on them. Any day a new interpretation or a new combination of the verifiable phenomena on which our dearest theory rests may be proposed by some unheard-of stripling. If this interpretation be truer and explain the verifiable facts more completely or rationally, then the new thory displaces the old, and our text-books, which follow the canonical nomenclature, must substitute new "principles" for the superannuated.

In the third place, it is an error to assume that there can be any effective teaching of the science or art of medicine in *ex cathedra* presentation of the theories or "principles" in which the verifiable facts of medicine and their relations have been conventionally expressed. The abstract expression of even the most simple correlations of unknown phenomena make no true nor lasting impression on the mind of the student, but given the experience of discovering the concrete phenomena and the further experience of correlating them and expressing this correlation even imperfectly, the student readily grasps the extended theory in all its details and keeps it ready as a part of the formulæ or machinery of his mind. Should he in time forget this theory, or should its expression become confused in his mind, he can go back to the memory of his experiences or experiments and rebuild it and then make use of it with any matter at hand.

BAYARD HOLMES, M.D.

Pre-Columbian Leprosy.

NEW YORK CITY, Jan. 25, 1900.

To the Editor:—In Dr. Kinyoun's able report on leprosy, as a delegate to the International Leprosy Conference, Berlin, published in the "Annual Report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States," for the years ending 1897 and 1898, there are two errors to which I beg to call attention. On page 27 (1897 report), he says: Ashmead (New York) claims to have demonstrated that leprosy existed in America in the pre-Columbian period, and submits photographs of bone lesions which have been discovered in the ancient Peruvian graves. Further, this hypothesis is borne out by the specimens of Peruvian pottery of the Incan period."

My position is directly contrary to all this, as Dr. Kinyoun might have found out by simply reading my article (The Question of Pre-Columbian Leprosy: Photographs of Three Columbian Skulls and Some Huacos Pottery) published in the first volume of "Mittheilugen und Verhandlungen der Internationalen Wissenschaftlichen Lepra Conferenz zu Berlin," 1897. On page 73. I say: "There is no evidence in any bones that I have examined in America of any such thing as pre-Columbian leprosy; not a pharynx of a mummy shows a melting of bone, not a hand shows mutilation; no tuberculation of the tissues of the face, not a nose dropped in, nor can we find evidence of the importation of East Asiatic customs. Outside of the evidence on pre-Columbian potteries, deformations of faces, never of fingers and toes, is there the slightest evidence of the pre-Columbian leprosy. As to the deformities on huacos pottery, I exhibit here two photographs, each containing five potteries. These are from Chimbote, Peru, excepting one, the largest, which comes from Tepen, Peru. All these specimens are pre-Columbian, undoubtedly. In the first photograph, the one containing the figure lying on its belly, with amputated feet, the other four figures have also amputated feet, which of course, is not seen in the photograph. The figures are represented as kneeling, so by turning them around, the fact of the amputation appears. The flaps are shown, and the two bones on each leg. Whatever disease is represented in these faces must have been very frequently accompanied by some disease of the feet requiring amputation; and not of one foot, but of both. One of these figures is shown in the act of dressing the stump, with a cup containing some medicine; his other foot can not be seen, as he is sitting on it. In many of these faces, the nose has been eaten away, that is the cartilaginous part of it. In no instance does this eating away of the nose show any resemblance to the eating away of the nose by leprosy. The bones are never represented melted away, but are always present, only the soft part is gone. In many of these figures there is also a partial or total loss of upper lip, that is, the lip is eaten away, not drawn away by cicatrization, as would be the case in leprosy.

"In one of these figures we see a drawing-back of the head; this is accompanied by loss of nose and partial loss of upper lip. Whatever disease appears in the face, it is reasonable to suppose afflicted the spine. Tuberculosis (lupus) alone could have worked in that manner. If it was not this, it was then syphilis: but it could never have been leprosy.

"In two of our figures there are extreme prognathism, and evidently a diseased condition is meant. Could leprosy have produced that! Never."

Dr. Kinyoun's second mistake is in attributing to Dr. Buzzi, some remarks which followed the reading of my paper. It was Dr. Polakowsky, of the Berlin Anthropological Society, who discussed the question of pre-Columbianism of leprosy in America, taking my side against Dr. Virchow, who had attacked it.

ALBERT S. ASHMEAD, M.D.

Office Treatment of Female Generative Organs.

KEARNEY, NEB., Jan. 27, 1900.

To the Editor:—In THE JOURNAL of January 27, Dr. Milo Buel Ward has sounded the bugle-call of reform in that pernicious practice of office treatment of female generative organs.

How often do we see, in the present day, poor victims of that so-called tinkering local treatment week after week, with instruments that have been used on patient after patient, with only the cleaning that soap and cold water is able to give; admitting that proper sterilization has been done, the delicate endometrium has been subjected time and again to the ravages of the cotton probang? It is true, as Dr. Ward says, that the application of medicine to the vaginal vault for diseased appendages is quite as scientific as it would be for us to wash our faces in a bichlorid solution for the cure of post-nasal catarrh. Would that this article might be printed in abstract form and mailed to every physician in the land, and especially to the country practitioner, who does so much of this, never stopping to think of the many poor victims he sends out into the world, injured rather than benefited.

F. A. PACKARD, M.D.

Association News.

Rates for the Atlantic City Meeting.—The AMERICAN MEDICAL ASSOCIATION'S Committee on Transportation has for some time been in communication with the different passenger associations for the purpose of securing reduced rates to the June meeting. The Committee has asked a one-fare round trip with fifteen-day extension for that occasion, and at present has a preliminary report., but will present a full report through THE JOURNAL, probably in the next issue.

Section on Laryngology and Otology.—A most excellent program for the meeting in Atlantic City, June next, is announced for this Section. The list of papers to be presented is now complete and the program is full. Those who are to read papers are urged to send their abstracts by May 1, so as to give the Committee ample time to suitably arrange the topics for publication. C. R. Holmes, chairman; J. A. Stucky, secretary.

Books Received.

Acknowledgement of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review as dictated by their merits, or in the interests of our readers.

GENERAL AND LOCAL ANESTHESIA. By Aimé Paul Heineck, M.D., Clinical Instructor in Genito-Urinary Diseases, College of Physicians and Surgeons, Chicago; Clinical Instructor in Gynecology, Chicago Clinical School; Clinical Instructor in Surgery, Northwestern University Woman's Medical College. 124 pages. Price $1. Chicago: G. P. Engelhard & Co. 1899.

THE URINE AND THE CLINICAL CHEMISTRY OF THE GASTRIC CONTENTS, THE COMMON POISONS, AND MILK. By J. W. Holland, M.D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College of Philadelphia. Sixth Edition, Revised and Enlarged 12mo., 41 Illustrations. Price $1, net, Cloth. Philadelphia: P. Blakiston's Son & Co. 1899.

MANUAL OF DISEASES OF THE EYE. By Edward Jackson, A.M., M.D., late Professor of Diseases of the Eye in the Philadelphia Polyclinic and Colleges for Graduates in Medicine. 12mo, over 600 Pages, with 178 Illustrations from Drawings by the author. Philadelphia: W. B. Sanders. 1900. W. T. Keener, Chicago Agent.

KING'S COLLEGE HOSPITAL REPORTS; Being the Annual Report of King's College Hospital and the Medical Department of King's College. Edited by Nestor Tivard, M.D., F.R.C.P., W. Watson Cheyne, F.R.C.S., F.R.S., John Phillips, M.A., M.D., F.R.C.P., and W. D. Halliburton, M.D., D.R.S. Vols. iv and v. 8vo. Cloth. Price $1.80. London: Adlard and Son. 1898-99

HERMANN LUDWIG FERDINAND VON HELMHOLTZ. By John Gray McKendrick, M.D., LL.D., F.R.SS.L. and E. 8vo., cloth. Pp. 300. New York: Longmans, Green & Co. 1899.

MEDICO-CHIRURGICAL TRANSACTIONS. Published by the Royal Medical and Chirurgical Society of London. Vol. 82; Second Series, Vol. 64, 8vo., Cloth. Pp. 478. London: Longmans, Green & Co. 1899.

LECTURES ON THE PRINCIPLES OF SURGERY. Delivered at the University of Michigan by Charles B. Nancrede, A.M., M.D., LL.D., with an Appendix Containing a Résumé of the Principal Views Held Concerning Inflammation, by Wm. A. Spitzley, A.B., M.D. Illustrated. 8vo., Cloth. Pp. 398. Price $2.50, net. Philadelphia: W. B. Saunders. 1899. W. T. Keener, Chicago Agent.

SYSTEM OF DISEASES OF THE EYE. By American, British, Dutch, French, German, and Spanish Authors. Edited by Wm. F. Norris, A.M., M.D., and Charles A. Oliver, A.M., M.D., of Philadelphia. Vol. iv: Motor Apparatus, Cornea, Lens, Refraction, Medical Ophthalmology. With 51 Full-page Plates and 211 Text Illustrations. 8vo, Cloth. Pp. 950. Price, $20. Philadelphia and London: J. B. Lippincott Co. 1899.

REPORT OF THE COMMISSIONER OF EDUCATION FOR THE YEAR 1897-98. Vol. i, containg Part 1. Pp. 1280. Washington: G.P.O. 1899.

MANUAL OF ORGANIC MATERICA MEDICA AND PHARMACOGNOSY. An Introduction to the Study of the Vegetable Kingdom and the Vegetable and Animal Drugs Comprising the Botanical and Physical Characteristics, Source, Constituents, Pharmacopeial Preparations, Insects Injurious to Drugs, and Pharmacal Botany. By Lucius E. Sayre, B.S., Ph.M. Second Edition, Revised. With Histology and Microtechnique. By William C. Stevens. Illustrated. 8vo., Cloth. Pp. 684. Price, $4.50. Philadelphia: P. Blakiston's Son & Co. 1899.

WATER AND WATER SUPPLIES. By John C. Thresh, D.S.C. (London); M.D. (Victoria); D.P.H. (Cambridge). Second Revised Edition. 8vo, Cloth. Pp. 438. Price $2. Philadelphia: P. Blakiston's Son & Co. 1900.

BLANK BOOK FOR AUTOPSY-PROTOCOLS. By Aldred Scott Warthin, M.D., Ph.D., Assistant Professor in Pathology in the University of Michigan. Ann Arbor: George Wahr. 1899.

THE LUTE AND LAYS. By Charles Stuart Welles, M.D. 12mo.; Cloth. Pp. 104. Price $2. New York: The MacMillan Company. 1899.

Deaths and Obituaries.

VANDYKE G. SCHIBNECK, M.D., a graduate of the University of Maryland (medical department) died at Hagerstown, Ind., January 30, aged 55 years. He was a native of Frederick County, Maryland, took his medical degree in 1882, and practiced in Baltimore until about twelve years ago, when he removed to Indiana.

GERARD F. MASON, M.D., died in Charlestown, W. Va., of general debility, on the 30th ult. He was born in Virginia in 1815, and took his medical degree at the Jefferson Medical College in 1841, locating in Charlestown early in 1842, where he continued to practice until about four years ago.

HORACE VAUGHAN, M.D., Middletown, Conn., died January 22. He was born in Delaware in 1859, was graduated from the Jefferson Medical College in 1888, and was a member of the Delaware State Medical Society.

R. B. SKINNER, M.D., Barton, Vt., born in 1834 and graduated from the medical department of Harvard University, class of 1858, died recently. During the Civil War he served as a surgeon of the 3d Militia Regulars of Vermont, and later was a member in the legislature in that state.

E. T. PAINTER, M.D., Redlands, Cal., aged 44, died January 22. After graduating in medicine he took a post-graduate course in Berlin and Vienna, and was later connected with a Pittsburg medical journal, moving to Redlands in 1891.

ERNEST GEORGE METCALFE, M.D., Long Island College Hospital, Brooklyn, N. Y., 1872, died at his home in that city, from renal disease, February 2. He was for four years a lunacy examiner in the charities department and from 1886 to 1888 was a civil service commissioner.

A. J. AXTELL, M.D., Bloomington, Ind., born in 1827 in Pennsylvania, died January 25. He began the study of medicine in 1847 and in 1852 was Captain of Co. A, 97th Volunteers.

G. S. LAUTERMAN, M.D., Bellevue, Ohio, died January 29, from blood poisoning. He was 55 years old, was at one time mayor of his city, and during the Civil War served in the 3d New York Light Infantry.

FRANK HODGKIN, M.D., Chestertown, Maryland, died in Wilmington, Del., January 31. He studied medicine in Chicago and had practiced medicine about six years.

JAMES J. OATMAN, M.D., Altoona, Pa., died in that city January 30, aged 62 years. He was a graduate of the Jefferson Medical College and a veteran of the Civil War.

Among others we note the following deaths:

James M. Briggs, M.D., Bowling Green, Ky., January 26, aged 68 years.

Elsworth Colton, M.D., New Britain, Conn., January 26, aged 42 years.

J. J. Cooper, M.D., Barnett, Ga., January 24.

Eldridge G. Decker, M.D., Ft. Fairfield, Me., January 29, aged 74 years.

W. W. Duncan, M.D., Louisville, Ill., February 1, aged 70 years.

William Halsey, M.D., Caldwell, N. J., February 2, in his 85th year.

Edward D. Hitchcock, M.D., Newton, Mass., January 26, aged 45 years.

Wirt Johnston, M.D., Jackson, Miss., January 25.

D. S. Marquis, M.D., Rochester, Pa., January 31, aged 79 years.

M. G. Olivier, M.D., Berwick, La., January 26, aged 37 years.

Elijah S. Shirley, M.D., Xenia, Ill., February 1, aged 73 years.

A. J. Thomson, M.D., Cadillac, Mich., January 27, aged 59 years.

M. H. Van Riper, M.D., Kankakee, Ill., January 29, aged 67 years.

M. G. Whittier, M.D., Fairfield, Pa., January 30, aged 52 years.

Lloyd Wilbur, M.D., Hightstown, Pa., January 27, aged 70 years.

DEATHS ABROAD.

Thomas Grainger Stewart, a noted Scotch physician, died in Edinburgh, February 3, aged 63 years. He was born in Edinburgh in 1837, and educated at the University of Edinburgh. After graduating he studied in the universities and hospitals of Berlin, Prague, and Vienna. On his return to Edinburgh, he became resident physician in the Royal Infirmary. He was made pathologist to this institution and, in 1876, was appointed professor of the practice of physic in the University of Edinburgh. He published works on kidney, lung, and nervous diseases. He was president of the Medico-Chirurgical Society of Edinburgh and of the medicine section of the British Medical Association, and at the time of his death president of the Royal College of Physicians in Edinburgh and physician in ordinary to her Majesty, the Queen, in Scotland.

Miscellany.

Mosquitoes and Malaria.—An unofficial letter from Java, to the Berlin *Post*, states that Koch and his Dutch assistants are becoming more and more convinced that a single family of mosquitoes is the propagator of malarial infection. Investigation at the hill resorts where the people seek and find refuge from malaria showed the complete absence of this—the white spotted-wing—variety.

Traffic in Cadavers.—The newspapers of the last few days have contained accounts of the discovery, at Sioux City, Iowa, of a body shipped by express from Baltimore, Md. A janitor from the College of Physicians and Surgeons, Baltimore, has been arrested and committed to jail in default of $1000 on the charge of shipping bodies out of the state. It was found that there had been no foul play, the man having been struck by a street-car, dying in consequence at the city hospital after an ineffectual trephining. The body had then been sent, as usual, to the city morgue, for identification, and after remaining there the usual time, unclaimed, a burial certificate was given by the coroner and the body turned over to the health department, which consigned it for anatomic use to the College of Physicians and Surgeons. The janitor shipped it in a box marked "books," to Sioux City. He has implicated a former resident physician of the College of Physicians and Surgeons, now of Sioux City, and further intimated that he had been shipping bodies in the same manner for some time past. The Maryland law bearing on such cases is very stringent, making the offense a misdemeanor, and the penalty imprisonment for a term not exceeding five years of hard labor in the city jail. The Iowa laws against importing bodies into that state are also said to be very strict.

Early Differentiation of Idiocy.—By testing the sensibility to pain, the taste and the attention, Czerny has been able to differentiate imbecility or idiocy in very young infants, and the subsequent career of the child has confirmed his diagnosis in every case. (*Deutsche Med. Woch.*, January 11.) The tests are only reliable when the infants are physically sound, and if there is any coexistent affection they should be postponed until recovery. An entire lack of attention indicates the severest form of idiocy, an abnormally fleeting attention, hard to hold, as in the "agile imbeciles," offers the best prognosis. The taste is tested with 25 per cent. solution of saccharin; 2 per cent. solution of quinin sulphate, etc., and the expression of pleasure at the sweet and disgust at the sour taste is evident even in the youngest normal children. But the only positive sign is the permanent analgesia of the entire surface of the body, which only occurs in the imbecile. Very imbecile or idiotic children, even several years old, can be severely pricked with a needle again and again without eliciting any expression of pain or fear.

Smallpox Prevalent.—The following cases have been reported to the U. S. Marine-Hospital Service: Alabama, January 2-22, 6 cases; Florida, January 13-16, 3; Georgia, January 4-20, 60; Louisiana, Dec. 20, 1899, to January 20, 366 cases and 11 deaths; West Virginia, January 26, 26 cases. In Colorado there has been no widespread epidemic since last year, and the total of cases reported since January 1, is 17. The following measures to stamp out the disease are strictly enforced: 1. Immediate isolation of all cases. 2. Compulsory vaccination and detention for fourteen days following exposure. 3. Fumigation with sulphur for twenty-four hours, using five pounds to each one thousand cubic feet of space, and destruction by fire of such articles as can be burned. Vaccination is urged on all citizens. The Georgia epidemic started in a Savannah hospital and was traced directly to importation from Porto Rico. Up to the present time there have been 500 to 600 cases in the vicinity of Brunswick. In nearly every instance it has appeared in so mild a form that many physicians failed to recognize the disease. Although the mortality has been less than 4 per cent., the disease in Southeastern Georgia, with remarkable rapidity, extended along the lines of railways and has assumed a serious form. In Ohio, now that the medical profession has accepted the diagnosis of smallpox, the disease, while still appearing here and there, is making little headway, and there is not much probability of the development of epidemic conditions such as prevailed last year.

ANTIVIVISECTION: A REVIEW OF THE PROPOSED LAW.

WASHINGTON, D.C., Jan. 26, 1900

HONORABLE COMMISSIONERS, District of Columbia.

Gentlemen: Referring to a bill entitled "A Bill for the further prevention of cruelty to animals in the District of Columbia" (S. 34), which has been referred to me for an expression of opinion relative thereto, I have the honor to submit the following report:

The bill now under consideration is identical in its terms with Senate bill 1063, similarly entitled, which, having been favorably reported by the Committee on the District of Columbia, was pending in the Senate at the time of its adjournment, March 4, 1899. It undertakes to accomplish its purpose solely by the regulation of experiments on living animals, and must be considered in its relation to mischievous practices, if any, tolerated by existing law. The following statutory provisions seem to bear upon this subject (Abert's Statutes in Force, etc. p. 540 et seq.):

Sec. 5. . . . . whoever, having the charge or custody of any animal, either as owner or otherwise, inflicts unnecessary cruelty upon the same, . . . shall for every such offense be punished by imprisonment in jail not exceeding one year, or by fine not exceeding two hundred and fifty dollars or by both such fine and imprisonment.

Sec. 6. Every owner, possessor, or person having the charge or custody of any animal, who . . . knowingly and wilfully authorizes or permits the same to be subjected to unnecessary torture, suffering, or cruelty of any kind, shall be punished for every such offense in the manner provided in section one.

Sec. 9. Whenever complaint is made by any member of the Association for the Prevention of Cruelty to Animals (Washington Humane Society), on oath or affirmation, to any magistrate authorized to issue warrants in criminal cases, that the complainant believes, and has reasonable cause to believe, that the laws in relation to cruelty to animals have been or are being violated in any particular building or place, such magistrate, if satisfied that there is reasonable cause for such belief, shall issue a search warrant, authorizing any marshal, deputy marshal, constable, police officer, or any member of the Association for the Prevention of Cruelty to

Animals (Washington Humane Society), to search such building or place.

Sec. 10. It shall be the duty of all marshals, deputy marshals, constables, police officers, or any member of the Association for the Prevention of Cruelty to Animals (Washington Humane Society), to prosecute all violations of the provisions of this Act which shall come to their notice or knowledge, and fines and forfeitures collected upon or resulting from the complaint or information of any member of the Association for the Prevention of Cruelty to Animals (Washington Humane Society) under this Act shall inure and be paid over to said association, in aid of the benevolent objects for which it was incorporated

. . . . . .

Sec 15. Nothing in this Act contained shall be construed to prohibit or interfere with any properly conducted scientific experiments or investigations, which experiments shall be performed only under the authority of the faculty of some regularly incorporated medical college, university or scientific society.

What the foregoing provisions may mean to a mind trained in the subtleties of the law, I of course am unable to state; but to one who must accept language in its ordinary sense it appears that there is already ample provision for the punishment of any unnecessary cruelty; that the members of the Washington Humane Society have extreme power relative to the search of private premises on which there is reason to believe animals are being needlessly tortured; that it is not only the privilege, but also the duty, of every member of the society, as well as of every peace-officer, to enforce the law against such offenses, and that members of the Washington Humane Society are offered a special inducement to perform their duty by reason of the fact that all fines and forfeitures become the property of their society; and finally, that any person undertaking to perform experiments involving suffering on the part of any of the lower animals is protected from punishment only when such experiments are performed under the authority of some regularly incorporated medical college, university, or scientific society, and even then only so long as they are *properly* conducted. If this construction of the law be correct there is apparently no need for new legislation. If, however, there be such need in fact, it should appear from abuses which exist, or which have existed, without reasonable possibility of hindrance under present law.

The current law has been in force since 1871, more than a quarter of a century. With the obligation which has rested upon the members of the Washington Humane Society, among others, to enforce it, it may be accepted as certain that if any abuses have existed an effort has been made to correct them. The method of procedure for the enforcement of this law is by the issue of search warrants, and by arrest, and trial in the Police Court. The record, if any, of unsuccessful attempts to enforce it should be found therefore, in the Police Department or in the Police Court. I have been unable, however, to discover any evidence of a single search warrant having been issued, or of a single prosecution having been instituted, during this entire period, based on the alleged performance of experiments on living animals in violation of law; that is, the alleged performance of such experiments either improperly or without lawful authority.

I am aware that the objection may be made that it has been necessary to show malice in order to maintain a prosecution, and that for that reason, as much as by reason of the exempting clause, it has been impossible to prosecute for experiments on animals. But this is a matter which must depend upon the construction of the law, and it does not appear that any competent court has ever been given an opportunity to construe it. To one not versed in legal technicalities it appears that a law which forbids unnecessary cruelty might imply malice from the very absence of necessity, and that the exemption of the experimenter from liability under certain conditions can mean nothing else than that he is liable under all other conditions. If abuses exist or have existed why have the courts not been afforded an opportunity to say whether they can or can not be remedied under existing law?

But if we suppose that animals have been experimented upon in an unnecessarily cruel manner without possibility of prevention under existing law, the idea naturally suggests itself that specific instances of such experimentation must have been placed on record in the hearings which have been accorded those endeavoring to secure the enactment of this measure, and in the reports which they have filed with it. There has been no complaint that anything was excluded from such hearings or from such reports which had even the most remote bearing upon the subject; but while instances of alleged cruelty have been cited from various parts of the world not one has been placed on record which was in any way related to the District of Columbia. The omission is significant. In the absence of any explanation it is to my mind conclusive that the promoters of this measure had no such evidence to submit. And if the absence of evidence to show that such abuses have existed is noticeable, the lack of evidence to show that they are likely to exist is equally striking.

The foregoing considerations have convinced me that no legislation such as is proposed in this bill is needed. If, however, this were all that could be said of it, if it could be classed as harmless even if unnecessary, there would be no objection to its enactment, other than the undesirable cumbering of the statute books. No better way of discovering the probable effect of this measure, whether harmful or otherwise, could be found than by ascertaining the effect of similar legislation in other places where the general scheme of law is the same as that of this District. Unfortunately, however, no such legislation exists in the United States. Congress is asked to legislate tentatively for the District of Columbia. But even if the promoters of the proposed experiment be excused from showing any local need therefor, it is certainly incumbent upon them to show that it will do no harm: no one should be required to demonstrate that it will work mischief in order to prevent its enactment.

But in the absence of any possibility of ascertaining the probable effect of this proposed law by observation and analogy, and while waiting for evidence as to its harmlessness from those who are seeking to secure its passage, an examination of the bill will yield information upon which a provisional judgment, more or less accurate, can be based. One of the most important requisites of a law is that it shall be intelligible and definite; not intelligible only to the lawyer, but also to the average man who must live under it. Many of the provisions of the bill now under consideration are obscure and some seem repugnant to each other.

As an example we may cite paragraph *b* of section 2, which is as follows:

The experiment must be performed by a person holding such license from the Commissioners of the District of Columbia as in this Act mentioned, *or by a duly authorized officer of the Government of the United States, or of the District of Columbia.*

It is by no means clear whether due authorization refers to the authorization to perform the ordinary duties of the office, or whether it refers to some special authoritity to perform experiments upon animals. If the former be intended persons having no knowledge of scientific matters are at liberty to experiment at will; if the latter, there is no indication of the source or form of this "due authorization."

Again, paragraphs *c* and *d*, section 2, read:

c. The animal must, during the whole of the experiment, be completely under the influence of ether or chloroform sufficiently to prevent the animal from feeling pain, excepting only that in so-called inoculation experiments, or tests of drugs or medicines, the animal need not be anesthetized nor killed afterwards, nor in tests of surgical procedure need animals be kept completely anesthetized during the process of recovery from a surgical operation. Otherwise than this the animal must be kept from pain during all experiments: and

d. Th animal must, if the pain is likely to continue after the effect of the anesthetic has ceased, or if any serious injury has been inflicted on the animal, be killed before it recovers from the influence of the anesthetic which has been administered.

Paragraph *c* provides that after an inoculation experiment the animal need not be killed: paragraph *d*, that if pain is likely to continue after the experiment, it must be killed. The former provides that in tests of surgical procedure the animal need not be completely anesthetized during the process of recovery from the operation; the latter, that if pain is likely to continue after the effect of the anesthetic has ceased, or if any serious injury has been inflicted on the animal, it must be killed before it recovers from the influence of the anesthetic. Is the investigator to perform experiments of this sort with the liability of being compelled to defend himself in a criminal prosecution simply because of the vague language of this statute?

These citations are made solely for the purpose of illustrating the difficulty which will be likely to arise in determining the meaning of this bill should it become a law. As they have not been pointed out for the purpose of securing alteration or correction, it is not pretended that they may represent every doubtful or ambiguous phrase which occurs in the bill now under consideration.

If the language of this bill is uncertain, its effect, if enacted into law, seems, too, to be more or less obscure. In all of the discussion no allegation has been affirmed on one side, or denied on the other, with so much vigor as, that the proposed regulations are prohibitory in their character. The affirmative has been held by scientific men all over the United States, who have examined the provisions of this bill and many of whom are engaged in research work involving the use of living animals. The negative has been supported by persons entirely ignorant of the technique of vivisection or having only a theoretical acquaintance with it. As to the relative weight to be attached to opinions upon this point originating from such sources there can be no question. One matter, however, is so clear as to be beyond the reach of controversy: that is, that the proposed law would take the regulation of such experiments out of the control of medical colleges and scientific societies and entrust it, even to the extent of absolute prohibition, to two laymen, forming a majority of the Board of Commissioners. To this statement there is possibly one exception, and that is with reference to the possibility of clerks and messengers in the service of the United States or of the District of Columbia, being permitted in some more or less indefinite manner to perform experiments, under paragraph *b*, section 2. But it is believed that if any unprejudiced person, unbiased by emotion, will consider all of the restrictions imposed by this law—the trebly-indorsed applications and certificates, the registrations, the inspections, the use of anesthetics, the choice of animals, the reports, and the other technicalities which can be appreciated only after an effort to comprehend what this bill requires—he can come to but one conclusion, and that is that, if enacted into law, it will at the very least seriously hamper experimentation on living animals, and that it puts it quite within the reach of officers charged with its enforcement to execute its provisions so as to prevent such work even while nominally permitting it.

All of the rigorous requirements of this proposed statute might be looked upon lightly if they were such as would be called into action only by the commission of some act wrong either from a moral or a legal standpoint, and have reference only to the offender. But from the very moment of the passage of the bill there would be new rules of law so far as relates to animals, domestic and wild: new limitations upon a man's right of property in such things; new restrictions upon his freedom in the choice of means whereby to add to his own stock of knowledge and to the stock of knowledge of mankind as a whole; a new rule for the invasion of the homes, workshops, and laboratories of citizens, and a new rule for the search of their papers; and citizens would be required (if it were possible for law to require it) to bear evidence against themselves in the

form of reports called for by the Commissioners. And all of this change is to be made not because of any wrong done or alleged to have been done in this District, but because of alleged improper practices in Paris, Vienna, Milan, and elsewhere.

Pain is universally associated with the life of every vertebrate animal. The only fair way of considering the question now before us is, therefore, not by inquiring whether experiments such as it is proposed to regulate create pain, but by seeking to learn whether they increase or diminish the total amount of the suffering which exists and will continue to exist until the end of time. Those who seek the passage of this bill do not appear to have looked beyond the pain which may be caused in some cases by experimentation: it is a noteworthy fact that in few if any of the instances of alleged cruelty which they have set forth have they thought it necessary or material to the point at issue to state the purpose or the result of the experiment. In drafting this bill they have confined their attention so closely to the immediate, the apparent, suffering that they have forgotten the terror which must strike the animal, the deathly sickness, and the probable fruitless loss of life, likely to result from the very process of anesthetization, which must in many cases outweigh the pain which would be inflicted were the experimenter to proceed without the use of anesthetics. The good which has been accomplished by experiments on animals has been fully set forth elsewhere by the opponents of this bill. The atrocities which have been occasionally committed have been set forth in high light by those who seek its passage; but such rare crimes do not represent the generality of experimentation any more closely than the murders and rapes which are reported daily represent existing civilization. It is believed, moreover, that existing law is sufficient to punish any wanton infliction of pain should it occur here: certainly it has not been demonstrated that it is not.

I am not unaware that this report has every appearance of an argument against the bill to which it refers, rather than a statement of its merits. I regret that this should be the case, but I believe that whatever merit this measure has, has been fairly set forth. If I had felt it either desirable or necessary to gauge its value by my feelings rather than by my intellect, or to appeal to the emotions of others, it might have been possible to have given this report a different color. The emotions deal with what is apparent without looking beyond to see either the purpose or the result. Those whose special training has not been such as to enable them to appreciate properly the fruits of experimentation on animals are those who cry for its regulation out of existence. Those who know what has been and what is capable of being accomplished by it, are those who seek its continuance. The former judgment is the product of emotion: the latter, the product of thought.

In considering this matter I have endeavored to lay aside as far as possible my character as a physician, and to consider the proposed law fairly and impartially. The foregoing statement is the result. It may be summed up briefly as follows: The proposed law seeks to take from the regularly incorporated medical colleges, universities, and scientific societies the right which they alone now have to authorize experiments on living animals, and to confer such authority in a restricted form on the Board of Commissioners, a lay organization of which two men constitute a majority. It seeks to take from the courts the power to decide whether any experiment has or has not been properly conducted, and to limit their authority to the power to determine whether in any given case an experiment was performed according to certain rules and regulations laid down in this bill. It undertakes to do away with the necessity for a warrant for the search of premises on which experiments are conducted, enabling any or all of four inspectors to enter at any time without notice. It seeks to subject the papers of the experimenter to search without warrant, by requiring him to make such reports as the Commissioners may direct, and in this manner it undertakes to make him bear evidence against himself. In support of the proposed bill not one fact has been adduced to show that harmful conditions exist, ever have existed, or are ever likely to exist in this District, not curable by existing law.

As the result of a careful consideration of this measure I have the honor to recommend that it be referred to the Attorney for the District, for a consideration of its legal aspects and for a review of such questions of law as have, unavoidedly, entered into this report. I have the honor to recommend further, subject, of course, to the opinion of the Attorney, that this bill be returned to the Senate Committee on the District of Columbia with a statement that it is vague in many of its provisions; that there is no evidence of the existence in this District of any such conditions as it is apparently the purpose of the bill to correct; that existing law appears to be sufficient for all present purposes; that the enactment of the present measure will interfere with scientific investigation in this District; and that the bill should not be passed.

Respectfully,

WM. C. WOODWARD, M.D., Health Officer.

Queries and Minor Notes.

VACCINATION.

HILLSBORO, N. D., Jan. 18, 1900.

To the Editor: The discussion of vaccination, *pro* and *con*, has come to such a point in this vicinity, that I feel that something authentic in the way of statistics should be given the public, at least in this neighborhood. However, I am not in a position here to gather the material. Would it be possible for you to send me complete statistics of the epidemics of smallpox and protection by vaccination, which certainly must be in a compiled form? This question is growing so embarrassing that it seems it should, as far as possible, be finally settled, not only in the minds of the members of the profession, but especially in the minds of the people.

Yours truly, T. M.

ANSWER: Our correspondent sends us copies of a little monthly called the *Sanitary Home*, which contains what purports to be arguments against vaccination and its dangers. These arguments (?) are too absurd for notice, and we would first advise our correspondent not to enter into a controversy with one who displays such gross ignorance. It is impossible to give complete statistics of the epidemics of smallpox; they have been too numerous in years past, and still occur in unvaccinated communities. There are plenty of statistics showing the results of vaccination in checking them, and one of the best studies of the subject, giving the most complete data, is that of Ernest Hart, in the third volume of Allbutt's System of Medicine. The article by Aeland, in the same volume will also do to consult in regard to the possible accidents of vaccination. These, it is fair to believe, are largely due to faulty methods and uncleanliness, and with proper care can be almost entirely eliminated. A pin prick or a mosquito may cause death under certain conditions, and vaccination is also liable to cause trouble if proper care is not observed. As a sample of statistics we can take those recently published for the German Empire (Medizinal-statistiches Mittheilungen aus dem kaiserl Gesundheetsamte; Bd. v., Hft. iii; British Med. Jour., July 15, 1899), where vaccination and revaccination are compulsory of late years. In 1897 there were five deaths in a total of forty-five cases. Three of these occurred on the Russian and Austrian frontiers, where the chances of exposure are greatest: only one occurred in a large town. In the towns in Holland the deaths were seven fold greater, in England sixteen fold, in France 123 fold, and in Austria 247 fold greater. The statistics of Dr. Groff, who stamped out smallpox in Porto Rico, where it was epidemic, might also be quoted, and there have been no bad results from vaccination reported there. The above German figures are reliable. We can not vouch for those of Dr. Harmon in the paper sent, and seriously doubt that a million of vaccinated persons died of smallpox in Germany between 1870 and 1885. The official figures show that the average number per annum from 1866 to 1895 was only 116; in 1895 it was 27, in 1896, 10. There can be no better argument than these figures, during these years of compulsory vaccination, and if deaths were numerous before, the better the showing. We hope to refer to this matter editorially, next week.

ASSOCIATION OF COLORED PHYSICIANS.

OKLAHOMA CITY, O. T., Jan. 31, 1900.

To the Editor: 1. Does the AMERICAN MEDICAL ASSOCIATION admit, to full membership, either by vote or as delegate from state, county, or district societies, persons of the African race? 2. Is or is there not an American association separate and apart from the "White Man's," organized and maintained by the colored race?

T. A. C.

ANSWER: 1. The AMERICAN MEDICAL ASSOCIATION accepts all delegates from affiliated societies without regard to color. 2. Yes. There is an association called the American Medical Association of Colored Physicians and Surgeons, of which Dr. O. D. Porter, Bowling Green, Ky., is president.

The Public Service.

ARMY CHANGES.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Jan. 19 to 22, 1900, inclusive:

Ira Ayer, acting asst.-surgeon, from the transport *Wright* to Fort Wood, N. Y., to accompany recruits to Manila, P. I., where he will report to the commanding general for assignment.

Peter J. A. Cleary, lieut.-col., deputy surgeon-general, sick leave extended.

Christopher C. Collins, acting asst.-surgeon, sick leave extended.

Jose M. Delgado, acting asst.-surgeon, from Washington, D. C., to Tampa, Fla., to await further orders.

Rudolph G. Ebert, major and surgeon, U. S. A., from Vancouver Barracks, Wash., to the Department of Alaska as chief surgeon.

Charles Farmer, acting asst.-surgeon, from New York City to Lexington, Ky., for annulment of contract.

Robert J. Gibson, major and surgeon, U. S. A., member of a board in San Francisco, Cal., to examine officers for promotion.

Frederick M. Hartsock, lieut. and asst.-surgeon, U. S. A., from New York City to Fort Warren, Mass.

J. C. Merrill, major and surgeon, U. S. A., member of a board at Washington, D. C., to examine medical officers for promotion.

Hugh L. Taylor, acting asst.-surgeon, previous orders directing annulment of contract revoked; he will report for duty at Fort Douglas, Utah.

Walter Whitney, acting asst.-surgeon, member of a board at Fort Sheridan, Ill., to examine officers for promotion.

Ezra Woodruff, major and surgeon, U. S. A., member of a board on Governor's Island, N. Y., to examine officers for promotion.

NAVY CHANGES.

Changes in the Medical Corps of the U. S. Navy for the week ended Jan. 27, 1900:

Surgeon H. N. T. Harris, ordered to the *Albany*, via the *Prairie*.

P. A. Surgeon L. L. Von Wedekind, ordered to duty on the *Richmond*.

(Changes by Cable from Asiatic Station.)

Asst. Surgeon R. C. Holcomb, detached from the *Solace* and ordered to the *Helena*.

MARINE-HOSPITAL CHANGES.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ending Jan. 25, 1900:

Surgeon L. L. Williams, granted extension of leave of absence for ten days.

Surgeon W. J. Pettus, granted leave of absence for one month and 29 days from February 10.

Asst.-Surgeon H. B. Parker, directed to report at Washington, D. C., for special temporary duty.

Acting Asst.-Surgeon John Frick, granted leave of absence for thirty days from February 28.

BOARD CONVENED.

Board convened to meet at 378 Washington Street, New York City, on Wednesday, February 7, 1900, for the purpose of examining candidates for appointment as assistant-surgeon in the Service.

Detail for the Board—Surgeon H. W. Austin, Chairman; Surgeon C. F. Banks, and Surgeon L. L. Williams, Recorder.

HEALTH REPORTS.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon General, U. S. Marine-Hospital Service, during the week ended Jan. 26, 1900:

SMALLPOX—UNITED STATES.

Colorado: Denver, Jan. 7, 1 case; Huerfano County, Jan. 9, 3 cases.

District of Columbia: Washington, Jan. 12 to 18, 2 cases.

Georgia: Blackshear, Jan. 11, 16 cases; Brunswick, Jan. 11, 10 cases; Darien, Jan. 11, 2 cases; Jessup, Jan. 11, 2 cases; Liberty, Jan. 11, 1 case.

Indiana: Evansville, Jan 13 to 20, 2 cases.

Kentucky: Covington, Jan. 13 to 20, 4 cases; Louisville, Jan. 11 to 18, 1 case.

Louisiana: Calcarien, Jan. 7 to 13, 3 cases; East Feliciana, Jan. 13, 50 cases; Livingstone, Jan. 13, several cases; New Orleans, Jan. 14 to 21, 84 cases, 2 deaths; Shreveport, Jan. 13 to 20, 2 deaths.

Massachusetts: Malden, Jan. 13 to 20, 1 case.

Nebraska: Omaha, Jan. 13 to 20, 1 case.

New York: New York, Jan. 13 to 20, 1 case.

Ohio: Cleveland, Jan. 13 to 29, 20 cases; Youngstown, Jan. 15 to 22, 7 cases.

Oklahoma: Beaver County, Jan. 10, reported; Blaine County, Jan. 10, 1 case; Noble County, Jan. 10, reported; Pawnee County, Jan. 10, reported.

Pennsylvania: Allegheny, Jan. 13 to 20, 1 case.

Texas: Satte, Jan. 1 to 16, 75 cases, 1 death; Houston, Jan. 6 to 13, 4 cases.

Virginia: Portsmouth, Jan. 13 to 20, 20 cases, 1 death.

SMALLPOX—FOREIGN.

Brazil: Bahia, Dec. 2 to 9, 1 case; Rio de Janeiro, Dec. 1 to 8, 52 deaths.

Canada: Ontario, Nov. to Dec. 30, 243 cases.

Egypt: Cairo, Dec. 23 to 31, 7 deaths.

England: London, Dec. 23 to Jan. 6, 15 cases; Southampton, Dec. 31 to Jan. 6, 1 case.

France: Lyons, Dec. 7 to 23, 2 deaths; Marseilles, Jan. 2, epidemic; Nice, Dec. 19 to 31, 1 case, Jan. 1 to 8, 1 case.

Greece: Athens, Dec. 31 to Jan. 6, 3 cases, 1 death.

India: Calcutta, Dec. 8 to 16, 2 cases, 2 deaths.

Mexico: Chihuahua, Jan. 6 to 13, 9 deaths; Vera Cruz, Jan. 6 to 13, 1 death.

New Brunswick: Campbelltown, Jan. 13 to 20, 5 cases.

Russia: St. Petersburg, Dec. 23 to 30, 12 cases, 7 deaths

Scotland: Leith, Dec. 31 to Jan. 6, 1 case.

Spain: Corunna, Dec. 23 to Jan. 6, 3 cases, 4 deaths.

Turkey: Smyrna, Dec. 17 to 24, 3 deaths.

YELLOW FEVER—UNITED STATES.

Florida: Key West, Jan. 16, 1 case.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, Dec. 1 to 8, 8 deaths.

Colombia: Barranquilla, Dec. 23 to 30, 1 case, 1 death.

Cuba: Havana, Jan. 6 to 13, 4 cases, 3 deaths.

CHOLERA.

India: Calcutta, Dec. 8 to 16, 38 deaths.

PLAGUE—UNITED STATES.

Hawaii: Honolulu, from outbreak to Jan. 8, 19 deaths.

PLAGUE—FOREIGN.

India: Calcutta, Dec. 8 to 16, 54 deaths; Kurrachee, Dec. 8 to 23, 3 cases, 3 deaths.

Japan: Formosa, Tamsui, Nov. 28 to Dec. 12, 14 cases, 7 deaths.

Paraguay: Asuncion, Nov. 7 to 21, 9 deaths.

Portugal: From outbreak to Jan. 6, 1900, 287 cases, 108 deaths

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